ROUTING AND TRANSMITTAL SLIP

Date: 7-31-86

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1.		
2. Dana Trugley		
3. SPED		
4.		
5.		

Action		File		Note and Return	
Approval		For Clearance		Per Conversation	
As Requested		For Correction		Prepare Reply	
Circulate		For Your Information		See Me	
Comment		Investigate		Signature	
Coordination		Justify			

REMARKS

- Vulcan Draft Permit
- Pub. Comment Period Ends 9-8-86

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Karen Flournoy	Phone No. 655

5041-102

RCRA

☆ U.S.G.P.O.: 1984-421-529/10

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

DRAFT

STATE OF KANSAS
DEPARTMENT OF HEALTH AND ENVIRONMENT
DIVISION OF ENVIRONMENT

PERMIT NO. KSD007482029

In accordance with the provision of Kansas Statutes Annotated 65-3430 et seq.

PERMISSION IS HEREBY GRANTED

To Vulcan Materials Company, I.D. Number KSD007482029 (herein called the permittee) to operate a hazardous waste storage, treatment and disposal facility located in Wichita, Kansas 6200 South Ridge Road, at latitude 37° 35' 000" and longitude 097° 25' 015" in accordance with rules and regulations of the Department of Health and Environment, (herein called the Secretary or the Department) and the following named conditions in Sections I-V and requirements to wit.

The Permittee must comply with all terms and conditions to this permit. This permit consists of the conditions contained herein (including those in any attachments) and the applicable regulations contained in 40 CFR Parts 260 through 264 and 270 and 124 as specified in the permit. Applicable regulations are those which are in effect on the date of issuance of this permit. (See 40 CFR Section 270.32(c)).

The permit is based on the assumption that the information submitted in the permit application received on August 4, 1983 as modified by subsequent amendments and letters dated November 21, 1983, November 20, 1984, November 1, 1985, May 31, 1986, June 2, 1986 and June 20, 1986, (hereafter referred to as the application) is accurate and that the facility will be constructed and operated as specified in the application. Any inaccuracies found in this information may be grounds for the termination or modification of this permit (see 40 CFR 270.41, 270.42 and 270.43) and potential enforcement action. The Permittee must inform the Kansas Department of Health and Environment of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit shall become effective at Midnight on _____, 1986 and shall remain in effect until _____, 1991 unless revoked and reissued, or terminated (40 CFR 270.41 and 270.43) or continued in accordance with 270.51(a).

Done at Topeka, this ____ day of _____, 1986

_____
Department of Health and Environment

DRAFT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

EPA AUTHORIZATION UNDER THE HAZARDOUS AND
SOLID WASTE AMENDMENTS OF 1984

Pursuant to Section 227 of the Hazardous and Solid Waste Amendments of 1984 (hereinafter "HSWA") EPA is granted authority to issue or deny permits for those portions of permits affected by the requirements established by HSWA. By this authority and pursuant to Sections 3002(b) and 3004(u) of the Resource Conservation and Recovery Act (RCRA) 42 U.S.C. § 6922(b) and 42 U.S.C. § 6924(u), as amended by HSWA, EPA hereby grants to Vulcan Materials Company, I.D. Number KSD007482029, permission to operate a hazardous waste storage, treatment and disposal facility located in Wichita, Kansas.

Section VI of this permit addresses the corrective action requirement for solid waste management units including Class I hazardous waste injection wells permitted after November 8, 1984 as administered and enforced by EPA. Applicable regulations are found in 40 CFR Parts 260 through 264, 270 and 124, as specified in this permit. Further, Section VI incorporates by reference those conditions specified in Section I.A.9. and Section II. k.1.(g).

Done at Kansas City, Kansas, this _____ day of _____ 1986.

_____
David A. Wagoner
Director, Waste Management Division

DRAFT

SECTION I

STANDARD CONDITIONS

A. EFFECT OF PERMIT

The Vulcan Materials Company, hereinafter referred to as the Permittee, is allowed to store/treat/dispose hazardous waste in accordance with the conditions of this permit. Any storage/treatment/disposal of hazardous waste not authorized in this permit is prohibited. Compliance with this permit constitutes compliance, for purposes of enforcement, with K.S.A. 65-3430 et seq. and K.A.R. 28-31-1 through 28-31-13 and Subtitle C of the Resource Conservation and Recovery Act (RCRA). Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Section 3013 or Section 7003 of RCRA, Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9606 (a), commonly known as CERCLA), or any other law providing for protection of public health or the environment.

B. PERMIT ACTIONS (40 CFR 270.30(f))

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 270.41, 270.42, and 270.43. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition. A permit issued under 40 CFR 270.61, "Emergency Permits" may supersede this permit for the duration and extent authorized by the emergency permit.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

D. DUTIES AND REQUIREMENTS

1. Duty to Comply (40 CFR 270.30(a)) The Permittee shall comply with all conditions of this permit, except as to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

2. Duty to Reapply (40 CFR 270.10(h) and 270.30(h)) If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 days before this permit expires, unless permission for a later submission date has been granted.

3. Permit Expiration (40 CFR 270.51) This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 40 CFR 270.13 thru 270.29) and through no fault of the Permittee, the Secretary has not issued a new permit as set forth in 40 CFR 270.51.

4. Need to Halt or Reduce Activity Not a Defense (40 CFR 270.30(c)) It shall not be a defense for the Permittee in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate (40 CFR 270.30(d)) The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance (40 CFR 270.30(e)) The Permittee shall at all times properly operate and maintain all facilities and systems of storage/treatment/disposal and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar system only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information (40 CFR 270.30(h)) The Permittee shall furnish to the Secretary, within a reasonable time, any relevant information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

8. Inspection and Entry (40 CFR 270.30(i)) The Permittee shall allow the Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

   (a) Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted or where records must be kept under the conditions of this permit;

   (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   (d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

9. Monitoring and Records (40 CFR 270.30(j))

   (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261, except as specified for the incinerator in Section IV of this permit.

   (b) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, the certification required by 40 CFR 264.73(b)(9), and records of all data used to complete the application for this permit for a

period of at least three years from the date of the sample, measurement, report or record. These periods may be extended by request of the Secretary at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

(c) Records of monitoring information shall specify:

(i) The dates, exact place, and times of sampling or measurements;

(ii) The individuals who performed the sampling or measurements;

(iii) The dates analyses were performed;

(iv) The individuals who performed the analyses;

(v) The analytical techniques or methods used;

(vi) The results of such analyses

(d) The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations for the duration of any solid waste management unit corrective action as specified in Section VI, Solid Waste Management Units.

10. Reporting Planned Changes (40 CFR 270.31(l)(1)) The Permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility.

The replacement of worn or broken parts need not be reported as long as replacement is with an equivalent component which does not adversely affect the designed operating procedures or performance of the facility.

11. Anticipated Noncompliance (40 CFR 270.31(l)(2)) The Permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

12. Transfer of Permits (40 CFR 270.30(l)(3), 270.40 and 264.12(c)) This permit may be transferred to a new owner or operator only if its modified or revoked and reissued pursuant to 40 CFR 270.41(b)(2) or 270.42(d). Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270.

13. Twenty-four Hour Reporting (40 CFR 270.30(1)((6)) The Permittee shall report to the Secretary any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances, including:

(a) Information concerning the release of any hazardous waste which may endanger public drinking water supplies.

(b) Information concerning the release or discharge of any hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

(c) The description of the occurrence and its cause shall include:

(i) Name, address, and telephone number of the owner or operator;

(ii) Name, address, and telephone number of the facility;

(iii) Date, time, and type of incident;

(iv) Name and quantity of materials involved;

(v) The extent of injuries, if any;

(vi) An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and

(vii) Estimated quantity and disposition of recovered material that resulted from the incident.

(d) A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Permittee need not comply with the five day written notice requirement if the Secretary waives the requirement and the Permittee submits a written report within fifteen days of the time the Permittee becomes aware of the circumstances.

14. Other Noncompliance (40 CFR 270.30(1)(10)) The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time monitoring reports, as required by this permit are submitted. The reports shall contain the information listed in condition D. 13 of this section.

15. Other Information (40 CFR 270.30(1)(11)) Whenever the Permittee becomes aware of failure to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Secretary, the Permittee shall promptly submit such facts or information.

16. Other Requirement The Permittee shall defend, indemnify, and hold harmless the State of Kansas, its officers, agents, and employees officially or personnally against all actions, claims, demands whatsoever which may arise from or on account of the issuance of this permit or the construction or maintenance of any facilities hereunder.

E. SIGNATORY REQUIREMENT (40 CFR 270.11 and 270.30(k))

All reports or other information requested by the Secretary shall be signed and certified as required by 40 CFR 270.11 and 270.30(k).

F. CONFIDENTIAL INFORMATION (40 CFR 270.12)

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR 270.12.

G. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

The Permittee shall maintain at the facility, until closure is completed and certified by an independent registered professional engineer and the owner, the following documents and amendments, revisions and modifications to these documents:

1. Waste Analysis Plan as required by 40 CFR 264.13 and this permit.

2. Personnel training documents and records as required by 40 CFR 264.16(d) and (e) and this permit.

3. Contingency Plan as required by 40 CFR 264.53(a) and this permit.

4. Closure Plan as required by 40 CFR 264.112(a) and this permit.

5. Cost estimate for facility closure as required by 40 CFR 264.142(d) and this permit.

6. Operating record as required by 40 CFR 264.73 and this permit.

7. Inspection schedules as required by 40 CFR 264.15(b) and this permit.

H. AVAILABILITY, RETENTION AND DISPOSITION OF RECORDS (40 CFR 264.74)

1. The Permittee must furnish all required records, including plans, upon request and will make those records available at all reasonable times for inspection, by any officer, employee or representative of the Department who is duly designated by the Secretary.

2. Unless otherwise specified, all records and/or copies thereof required to be maintained by the terms of this permit will be kept on-site for at least three years.

3. The retention period for all required records is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Secretary.

I. IMMINENT HAZARD ACTION (40 CFR 264.4)

Notwithstanding any other prosivions of this permit, enforcement actions may be brought pursuant to Sec. 7003 of the Resource Conservation and Recovery Act.

J. PENALTIES

Failure to comply with the terms of this permit may subject the permittee to an administrative and/or civil penalty, a criminal penalty and/or an action to suspend or revoke this permit. Failure to minimize or mitigate any adverse impact on the environment resulting from noncompliance may serve to increase the severity of such penalties.

SECTION II

GENERAL FACILITY CONDITIONS

A. DESIGN AND OPERATION OF FACILITY (40 CFR 264.31)

The Permittee shall design, construct, maintain, and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. This includes adherence to operating conditions and procedures, and emergency shutdown procedures specified in the permit application and in this permit.

B. REQUIRED NOTICE (40 CFR 264.12)

1. The Permittee shall notify the Secretary in writing at least four weeks in advance of the date the Permittee expects to receive hazardous waste from a foreign source. Notice of subsequent shipments of the same waste from the same foreign source is not required.

2. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of RCRA regulations.

C. GENERAL WASTE ANALYSIS (40 CFR 264.13)

The Permittee shall follow the procedures described in the attached Waste Analysis Plan, Attachment II. Waste analysis shall comply with the requirement of 40 CFR 264.13 and this permit.

D. SECURITY (40 CFR 264.14)

The Permittee shall comply with the security provisions of 40 CFR 264.14(b) and (c).

1. The Permittee must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portions of this facility. An artificial or natural barrier which completely surrounds the active portion of the facility and a means to control entry through gates or other entrances to the active portion of the facility must be maintained at all times.

2. In addition, the Permittee must post signs bearing the legend "Danger - Authorized Personnel Only," at each entrance to the treatment, storage, and disposal portions of the facility and at other locations in sufficient numbers to be seen from any approach to each portion of the facility in compliance with 40 CFR 264.14(c).

   This legend must be written in English and must be legible from a distance of at least 25 feet.

3. The Permittee will advise the Secretary if unauthorized entry occurred at the facility which caused hazardous waste to be discharged, the nature of problems, if any, that resulted from this occurrence, and corrective action taken by the facility to prevent future happenings. This includes any tampering, destruction or loss at the facility which caused release of hazardous waste.

E. GENERAL INSPECTION REQUIREMENTS (40 CFR 264.15)

1. The Permittee must inspect the facility as per the attached Inspection Schedule, Attachment III, for malfunctions and deterioration, operator errors and discharges which may be causing - or may lead to - (1) release of hazardous waste constituents to the environment, or (2) a threat to human health.

2. The Permittee must follow the attached written schedule for the inspection of monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as sump pumps) that are important to preventing, detecting, or responding to environmental or human hazards. The Permittee must keep this schedule at the facility.

3. The permittee must remedy any observed deterioration or malfunction of equipment or structures (such as leaks, cracks, or wall thinning) to ensure that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

4. The Permittee must record inspections in an inspection log or summary. The log or summary shall be kept for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

F. Personnel Training (40 CFR 264.16)

The Permittee shall conduct personnel training as required by 40 CFR 264.16. The Permittee will assure that appropriate facility personnel successfully complete the training program as outlined in Attachment V. Facility personnel must complete the training program within six months after the date of their employment or assignment to the facility, or assignment to a new position at the facility. Personnel must not work in unsupervised positions until they have completed this training program. Facility personnel must take part in an annual review of the required initial training. The training program shall be directed by a person trained in hazardous waste management procedures. The Permittee shall maintain training documents and records as required by 40 CFR 264.16 (d) and (e).

G. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE (40 CFR 264.17(a))

1. The Permittee must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including, but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions-sunlight), and radiant heat. While ignitable or reactive waste is being handled, the Permittee will confine smoking and open flame to specially designated locations. "No Smoking" signs will be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

2. The Permittee must document compliance with the requirements of 40 CFR 264.17(a) as outlined in 40 CFR 264.17(c).

H. LOCATION STANDARDS (40 CFR 264.18)

The facility is considered to be located above the hundred-year flood-plain, thus no permit conditions are needed with respect to location standards.

I. PREPAREDNESS AND PREVENTION

1. Required Equipment (40 CFR 264.32) The facility shall be equipped with the following:

(a) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.

(b) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, or fire departments.

(c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment.

(d) Water at adequate volume and pressure to supply water hose streams or foam producing equipment, or automatic sprinklers or water spray systems.

(e) All emergency and safety equipment as specified in the Part B Permit Application.

2. Testing and Maintenance of Equipment (40 CFR 264.33) The Permittee shall test and maintain the equipment specified in permit condition I.1 of this section and as specified in the attached Inspection Plan, Attachment III, as is necessary to assure its operation in time of emergency.

3. Access to Communications or Alarm System (40 CFR 264.34) The Permittee shall maintain access to the communications or alarm system as required by 40 CFR 264.34.

(a) Whenever, hazardous waste is being poured, mixed, or otherwise handled, the Permittee must ensure that all personnel involved in the operation will have immediate access to an internal alarm or emergency communication device, as described in the Part B permit application either directly or through visual or voice contact with another employee.

(b) If there is ever just one employee on the premises while the facility is operating, they must have immediate access to a device such as telephone (immediately available at the scene of operation) or hand held two-way radio capable of summoning external emergency assistance.

4. Required Aisle Space (40 CFR 264.35) At a minimum, the Permittee shall maintain aisle space to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency situation.

5. Arrangements with Local Authorities (40 CFR 264.37)

(a) The Permittee will attempt to make the following arrangements with the local authorities.

(i) Arrangements made to familiarize police and fire departments, with the layout of the facility, properties of hazardous wastes handled at the facility and associated hazards, places where facility personnel will normally be working, entrances to and roads inside the facility, and possible evacuation routes;

(ii) Where more than one police and fire department might respond, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority where there are more than one;

(iii) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(b) Where State or local authorities decline to enter into such arrangements, the Permittee must document the refusal in the operating record.

J. CONTINGENCY PLAN

1. Implementation of Plan (40 CFR 264.51) The Permittee shall immediately carry out the provisions of the Contingency Plan, Attachment IV, and follow the emergency procedures described by 40 CFR 264.56 whenever there is a fire, explosion, or release of hazardous waste or constituents which threatens or could threaten human health or the environment.

2. Copies of Contingency Plan (40 CFR 264.53) The Permittee must keep a copy of the attached Contingency Plan and all revisions of this plan at the facility and will submit the Contingency Plan and all revisions to all local fire departments, police and hospitals that may be called to provide emergency services.

3. Amendment of Contingency Plan (40 CFR 264.54)

(a) The Permittee must review, and immediately amend if necessary, the attached Contingency Plan, whenever:

(i) the permit is revised;

(ii) the plan fails in an emergency;

(iii) the facility changes -- in its design, construction, operation, maintenance, or other circumstances -- in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(iv) the list of emergency coordinators changes; or

(v) the list of emergency equipment changes; or

(vi) when any major revision is warranted.

(b) Amendments to the Contingency Plan are subject to the permit modification requirements of 40 CFR Part 270.

4. Emergency Coordinator (40 CFR 264.55) The Permittee shall comply with the requirements of 40 CFR 264.55, concerning the emergency coordinator. The Permittee will ensure that at all times there will be at least one employee either on the premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with responsibility for coordinating all emergency response measures. The emergency coordinator must in addition to carrying out the responsibilities specified in 40 CFR 264.56, be thoroughly familiar with all aspects of the facility's Contingency Plan, all operations and activities at the facility, and the location layout. In addition, this person must have the authority to commit the resources needed to carry out the attached Contingency Plan.

K. RECORDKEEPING AND REPORTING

1. Operating Record. (40 CFR 264.73) The Permittee must keep a written operating record at the facility. The following information will be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

(a) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage disposal at the facility as required by Appendix I of 40 CFR Part 264.

(b) The location of each hazardous waste within the facility and the quantity at each location.

(c) Records and results of waste analyses performed as specified in 40 CFR 264.13.

(d) Summary reports and details of all incidents that require implementation of the Contingency Plan;

(e) Records and results of inspections as required by Condition E "General Inspections Requirements";

(f) All closure cost estimates as required by 40 CFR 264.142.

(g) A certification by the permittee no less often than annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.

2. Biennial Report (40 CFR 264.75 and 270.30(1)(9))

The Permittee shall comply with the biennial report requirements of 40 CFR 264.75 and any other annual reporting requirement of the Secretary.

3. Manifests (40 CFR 264.71)

If the facility receives hazardous waste accompanied by a manifest, the Permittee, or his agent must:

(a) sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

(b) note any significant discrepancies in the manifest on each copy of the manifest; (40 CFR 264.729a));

(c) immediately give the transporter at least one copy of the signed manifest;

(d) within 30 days after the delivery, send a copy of the manifest to the generator;

(e) retain a copy of each manifest at the facility for at least three years from the date of delivery; and

(f) whenever a shipment of hazardous waste is initiated from the facility, the Permittee must comply with the generator requirements in 40 CFR Part 262 (CFR 264.71(c)).

4. Manifest Discrepancies (40 CFR 264.72 and 270.(1)(7)) Upon discovering a significant discrepancy, the Permittee must attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy is not resolved within 15 days after receiving the waste, the Permittee must immediately submit to the Secretary a letter describing the discrepancy and attempts to reconcile it and a copy of the manifest at issue. A significant discrepancy is defined in 40 CFR 264.72 for both the quantity and type of waste. A significant discrepancy in quantity for bulk waste is variations greater than ten percent in weight and for batch waste, any variation in piece count. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis.

5. Unmanifested waste report (40 CFR 270.30(1)(8)) This report must be submitted to the Secretary within 15 days of the receipt of unmanifested waste as specified in 40 CFR 264.76.

L. CLOSURE

1. Performance Standard (40 CFR 264.111) The Permittee shall close the facility as required by 40 CFR 264.111 and in accordance with the Closure Plan, Attachment VI.

2. Closure Plan (40 CFR 264.112)

(a) A copy of the approved Closure Plan and all revisions to the Closure Plan must be kept at the facility until closure is completed and certified by the Permittee and by an independent registered professional engineer.

(b) The Closure Plan may be amended at any time during the active life of the facility (the active life of the facility is the period from the initial receipt of hazardous waste at the facility until the Secretary receives certification of final closure). The Permittee must amend the plan whenever changes in operating plans or facility design affect the Closure Plan, or whenever there is a change in the expected year of closure. When the Permittee requests a permit modification to authorize a change in operating plans or facility design, he must request a modification of the Closure Plan at the same time. If a permit modification is not needed to authorize the change in operating plans or facility

design, the request for modification of the Closure Plan must be made within 60 days after the change in plans or design occurs.

(c) Amendments to the Closure Plan are subject to the permit modification requirements of 40 CFR 270.41 and 270.42.

3. Notification of Closure (40 CFR 264.112(c)) The Permittee shall notify the Secretary at least 180 days prior to the date closure is expected to begin.

4. Time Allowed for Closure (40 CFR 264.113) The Permittee shall treat or remove from the facility site all hazardous wastes within 90 days after receiving the final volume of hazardous wastes and in accordance with the Closure Plan, Attachment VI. The Permittee shall complete all closure activities within 180 days after receiving the final volume of hazardous wastes and in accordance with the attached Closure Plan.

5. Disposal or Decontamination of Equipment (40 CFR 264.114) The Permittee shall decontaminate and/or dispose of all facility equipment as required by 40 CFR 264.114 and the Closure Plan, Attachment VI.

6. Certification of Closure (40 CFR 264.115) When closure is completed, the Permittee must submit to the Secretary certification both by the Permittee and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved Closure Plan.

M. COST ESTIMATE FOR FACILITY CLOSURE (40 CFR 264.142)

The Permittee's original closure cost estimate, prepared in accordance with 40 CFR 264.142(a), is specified in Attachment VI.

1. The Permittee must adjust the closure cost estimate for inflation within 30 days after the anniversary of the date on which the closure cost estimate was prepared, as required by 40 CFR 264.142(b).

   The annual inflation adjustment of the closure cost estimate is not subject to the permit modification requirements of 40 CFR Part 270.

2. The Permittee must revise the closure cost estimate whenever there is a change in the facility's Closure Plan as required by 40 CFR 264.142(c).

   This type of revision is subject to the permit modification requirements of 40 CFR 270.41 and 270.42.

3. The permittee must keep at the facility the latest adjusted closure cost estimate as required by 40 CFR 264.142(d).

N. FINANCIAL ASSURANCE FOR FACILITY CLOSURE (40 CFR 264.143)

The Permittee shall demonstrate continuous compliance with 40 CFR 264.143 by providing documentation of financial assurance, as required by 40 CFR 264.151 and 40 CFR 264.149, in at least the amount of the cost estimates required by permit condition M. of this section. Changes in financial assurance mechanisms must be approved by the Secretary pursuant to 40 CFR 264.143.

O. LIABILITY REQUIREMENTS (40 CFR 264.147)

The Permittee shall demonstrate continuous compliance with the Sudden and Non-Sudden Accidental Occurrence Liability Assurance requirements of 40 CFR 264.17(a) and (b) and the documentation requirements of 40 CFR 264.151 and 40 CFR 264.149.

P. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS (40 CFR 264.148)

The Permittee shall comply with 40 CFR 264.148 whenever necessary.

SECTION III

STORAGE IN CONTAINERS

A. Waste Identification

1. The Permittee may store the following wastes in containers at the facility, subject to the terms of this permit.

EPA Hazardous Waste No.	Description
F021	Wastes (except waste water and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.
F027	Discarded unused formulations containing Tri-, Tetra-, or Pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-Trichlorophenol as the sole component).

2. The hazardous waste identified above shall be stored in a maximum of 250 fifty-five (55) gallon drums meeting the U.S. Department of Transportation specifications. The drums of hazardous waste shall be stored only in the drum storage area specified in the permit application.

B. CONTAINER STORAGE AND CONTAINMENT SYSTEM

1. Condition of Containers (40 CFR 264.171) If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit.

2. Compatibility of Waste with Containers (40 CFR 264.172) The Permittee shall assure that the ability of the container to contain the waste is not impaired as required by 40 CFR 264.172.

3. Management of Containers (40 CFR 264.173) The Permittee shall manage containers as required by 40 CFR 264.173.

4. Special Requirements for Ignitable or Reactive Waste (40 CFR 264.176) The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line.

5. Special Requirements for Incompatible Wastes (40 CFR 264.177) The Permittee shall store incompatible waste in containers in accordance with requirements of 40 CFR 264.177.

6. Inspections (40 CFR 264.174) At least weekly, the Permittee must inspect the hazardous waste storage area looking for leaking containers and for deterioration of containers and containment system.

7. Containment System (40 CFR 264.175) The container storage area shall be designed and operated in accordance with the requirements of 40 CFR 264.175.

Section IV

INCINERATION

A. CONSTRUCTION

The Permittee shall maintain the incinerator, associated air pollution equipment and monitoring equipment (hereafter referred to as the "incinerator") in accordance with the design criteria and specifications submitted in the application. The Permittee shall not make modifications to the incinerator, except as specified in Section I (D)(10), without prior approval from the Secretary.

B. PERFORMANCE STANDARD (40 CFR 264.343)

The Permittee shall design, construct and maintain the incinerator so that, when operated in accordance with the operating requirements specified in this permit, it will meet the following performance standards.

1. The incinerator must achieve a destruction and removal efficiency (DRE) of 99.99% for each of the principal organic hazardous constituents (POHC) for the waste feed. The DRE shall be calculated using the method specified in 40 CFR 264.343(a).

2. The Permittee must control hydrogen chloride (HCl) emissions, such that the rate of emissions is no greater than the larger of either 1.8 kg/hr or 1% of the HCl in the combustion gas prior to entering any pollution control equipment.

3. The incinerator must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter when corrected for the amount of oxygen in the stack gas in accordance with the formula specified in 40 CFR 264.343(c).

4. Compliance with the operating conditions specified in Section IV.D. of this permit will be regarded as compliance with the above performance standards. However, evidence that compliance with such permit conditons is insufficient to ensure compliance with the above performance standards may be "information" justifying modification, revocation or reissuance of the permit pursuant to 40 CFR 270.41.

C. LIMITATIONS ON WASTES

1. The Permittee shall incinerate only the following hazardous wastes, subject to the terms of this permit.

EPA Hazardous Waste No.	Description	Maximum Feed Rate
K016	Heavy ends or distillation residues from the production of carbon tetrachloride (Hex Waste).	1.0 Gallons per minute
The following	off-specification Commercial Chemical Products:	1.0 Gallons per minute
U228	Trichloroethylene	
U226	1,1,1-Trichloroethane	
U211	Tetrachloromethane	
U210	Tetrachloroethylene	
U080	Dichloromethane	
U045	Chloromethane	
U044	Trichloromethane	
F001,F002	Organic solvents generated during cleanup of spill of "hex" waste	1.0 Gallons per minute

2. The total chlorine content of any hazardous waste fed to the incinerator shall not exceed 728 pounds per hour.

3. Only hazardous waste generated on site, by the Permittee, and hazardous waste generated off site as the result of a spill for which the Permittee is designated as the generator may be incinerated by the Permittee.

4. The total ash content of any hazardous waste fed to the incinerator shall not exceed one (1) percent.

D. OPERATING CONDITIONS

The Permittee shall feed only the hazardous wastes described in Section IV. C. to the incinerator and only under the following conditions:

1. The combustion temperature of the incinerator, measured as specified in Section IV, D.13, shall be maintained at, or above 1100°C (2012°F).

2. The combustion air flow rate, measured as specified in Section IV. D.13, shall be maintained between 200 SCFM and 875 SCFM.

3. The concentration of carbon monoxide (CO), measured as specified in Section IV, D.13, in the incinerator's stack gas shall not exceed 80 ppm for a period in excess of two (2) minutes, or 140 ppm at any time.

4. The concentration of oxygen (O_2), measured as specified in Section IV, D.13, in the incinerator's stack gas shall not be less than three (3) percent.

5. The concentration of carbon dioxide (CO_2), measured as specified in Section IV, D.13, in the incinerator's stack gas shall not be less than 8 percent.

6. The pH of the liquid to the caustic section of the stack gas scrubber, measured as specified in Section IV, D.13, shall be maintained between 8.5 and 12.50 pH units.

7. The flow rate of the caustic liquid to the caustic section of the stack gas scrubber, measured as specified in Section IV, D.13, shall not be less than 9.0 gpm (gallons per minute).

8. The flow rate of the water to the top section of the stack gas scrubber, measured as specified in Section IV, D.13, shall not be less than 5.0 gallons per minute.

9. The temperature of the water to the top section of the stack gas scrubber, measured as specified in Section IV, D.13, shall be less than 120°F.

10. The temperature of the K016 (hex feed) waste fed to the incinerator, measured as specified in Section IV, D.13, shall be maintained between 300 and 450°F.

11. The Permittee shall control fugitive emissions from the incineration system through a vigorous inspection and maintenance program. At any time that fugitive emissions from the incineration system are detected, all hazardous waste to the incinerator must be shut-off and must remain shut-off until repairs have been completed.

12. The Permittee shall install, calibrate and maintain the systems specified in Section IV, D.13, to automatically take corrective action whenever the operating conditions of the incinerator meet or are outside of the following limits:

Operating Condition	Lower Limit	Upper Limit	Corrective Action
Combustion Temperature	1100°C (2012°F)	--	Automatic waste feed shut-off.
Combustion Air Flow Rate	200 scfm	875 scfm	Automatic waste feed shut-off
Stack Gas CO Concentration	--	80 ppm	Automatic waste feed shut-off after 2 min.

Operating Condition	Lower Limit	Upper Limit	Corrective Action
Stack Gas CO Concentration	--	140 ppm	Automatic waste feed shut-off
Stack Gas O_2 Concentration	3%	--	Automatic waste feed shut-off
Stack Gas CO_2 Concentration	8%	--	Manual waste Feed shut-off
pH of liquid to caustic scrubber	8.5	12.5	Manual waste feed shut-off
Caustic scrubber flow rate	9.0 gpm	--	Manual waste feed shut-off
Water flow rate to top scrubber section	5.0 gpm	--	Manual Waste feed shut-off
Temperature of water to top scrubber section	--	120°F	Manual waste feed shut-off
Waste feed temperature (hex waste only)	300°F.	450°F.	Manual waste feed shut-off
Waste feed flow rate (all wastes)	--	1.0 gpm	Automatic waste feed shut-off

13. The Permittee shall monitor and record the incineration operating parameters as specified below:

OPERATING PARAMETER	OPERATING RANGE	FREQUENCY OF MONITORING	FREQUENCY OF CALIBRATION	INSTRUMENT
Combustion Temp.Zone	2012-2300°F	Continuously	6 times/Yr.	Thermo-couple/ Transducer
Combustion Air Flow Rate	200-875 scfm	Continuously	4 times/Yr.	Annubar
Stack Gas Oxygen Conc.	3-8%	Continuously	Once/week	Beckman O_2 Analyzer

OPERATING PARAMETER	OPERATING RANGE	FREQUENCY OF MONITORING	FREQUENCY OF CALIBRATION	INSTRUMENT
Stack Gas CO Conc.	0-80 ppm	Continuously	Once/Week	Beckman CO Analyzer
CO_2 Conc.	8-16%	*	*	Thermistor Detector GC
pH of Scrubber Circulation	8.5-12.5 pH	Continuously	Once/Week	UNILOC pH Analyzer
Caustic Circulation Rate	9-13 gpm	Once/4 Hours	4 times/Yr.	Orifice Plate
Water to top Section of Scrubber	5-8 gpm	Once/4 Hours	4 times/Yr.	Orifice Plate
Temperature Water to Top Section of Scrubber	105-120°F.	Once/4 Hours		Thermo-couple
Waste Feed Temperature	300°-450°F.	Once/4 Hours		Thermo-couple
Waste Feed Flow Rate	0-1 gpm	Continuously	Once/Week	Orifice Plate

*After start up, CO_2 samples shall be collected as soon as a steady state condition has been achieved and, at a minimum once during each shift but not less than six (6) hours apart thereafter.

14. Upon request by the Secretary or at least once during the life of this permit, the Permittee shall perform the test required by 40 CFR 264.347(a)(3). The permittee shall notify the Secretary at least 90 days prior to performance of the test and submit a test plan. All testing must be completed at least 180 days prior to expiration of the permit. The results of the test must be submitted with any new permit application under Section I (D)(3).

15. The Permittee shall document and maintain the monitoring and inspection records as required by 40 CFR 264.347(d)

16. The Permittee must cease operation when changes in the waste feed or operating conditions deviate or exceed conditions and/or limitations designated in this permit.

SECTION V

UNDERGROUND INJECTION WELLS

A. Construction

The permittee shall maintain the underground injection wells and associated equipment in accordance with the design criteria and specifications contained in the UIC permits (Attachment I of this permit) and in the Part B Application. The permittee shall not make any modifications to the injection wells, except as specified in Attachment I, without prior approval from the Secretary.

B. Performance Standard

The permittee shall design, construct and maintain the underground injection wells so that the performance standards specified in the UIC permits, Attachment I, and the Part B Application will be met.

C. Limitations on Waste

The permittee may inject the following hazardous wastes, subject to the terms and conditions of this permit and the UIC permit (Attachment I).

EPA Hazardous Waste No.	Description
D002	Corrosive Process Wastewater
K016	Groundwater Cleanup Wastewater

D. Monitoring and Inspections

The permittee shall monitor and inspect the underground injection wells as specified in this permit, the Part B Application and the attached UIC permits. The monitoring and inspections records shall be maintained as required by this permit and shall be kept on site for at least three (3) years from the date of the monitoring activity or inspection.

E. The permittee must cease underground injection of waste and notify the Secretary whenever the operating conditions or the waste limitations of this permit, Attachment I, are exceeded.

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SECTION VI

SOLID WASTE MANAGEMENT UNITS

Section 3004(u) of the Resource Conservation and Recovery Act (RCRA) 42 U.S.C. §6924, as amended by Section 206 of the Hazardous and Solid Waste Amendments of 1984 (HSWA) requires that all permits issued after November 8, 1984, address releases of hazardous waste or hazardous constituents from any solid waste management unit, regardless of when waste was placed in the unit or whether the unit is closed. Permits issued under Section 3005 of RCRA shall contain a schedule of compliance for corrective action where corrective action cannot be completed prior to permit issuance and assurance for financial responsibility for completing corrective action. Releases of hazardous waste and hazardous constituents to groundwater from solid waste management units have been documented at Vulcan; therefore, Section 3004(u) authority applies to this permit action. Groundwater corrective action has previously been undertaken by Vulcan. This schedule of compliance requires further evaluation of groundwater releases and corrective action. This schedule of compliance also requires evaluation and corrective action, as appropriate, of potential or documented releases to other media. This section adopts by reference Sections I through V of this permit.

A. DEFINITIONS

1. "Solid Waste Management Unit" for the purposes of this permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank (including storage, treatment, and accumulation tanks), container storage unit, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit from which hazardous waste or hazardous constituents might migrate, irrespective of whether the units were intended for the management of solid and/or hazardous waste or when wastes were placed in the unit.

2. "Release" for the purposes of this permit includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, unauthorized injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

3. "Contamination" for the purposes of this permit refers to the presence of any hazardous waste or hazardous constituents in a concentration which exceeds the naturally occurring concentrations of that waste or constituent in the immediate vicinity of the facility (in areas not affected by the facility).

4. "Corrective action" for prior or continuing releases from solid waste management units for the purposes of this permit may include "corrective action" as provided for in 40 CFR §264.100, and other remedial actions for any environmental media as deemed appropriate by the EPA Regional Administrator, Region VII to protect human health or the environment.

5. "Hazardous constituents" for purposes of this permit are those substances listed in 40 CFR Part 261 Appendix VIII and include such substances released from solid waste management units and such substances that are reaction by-products.

B. DETERMINATION OF GROUNDWATER CORRECTIVE ACTION

1. The Permittee shall continue to operate and maintain the groundwater management system in existence on (date of permit issuance). Operation and maintenance of the groundwater management system shall continue until the Regional Administrator advises the Permittee that results of the remedial investigation and/or corrective action plan described hereafter require modifications to or replacement of the existing groundwater management system or additional corrective action supplementing the existing groundwater management system or other corrective action alternatives.

2. Within sixty (60) calendar days of permit issuance, the Permittee shall develop and submit for EPA review and approval a remedial investigation work plan outlining a site characterization sufficient to determine the nature and extent (both horizontal and vertical) of all groundwater contamination beneath the facility and beyond facility boundaries which has or may have resulted, either directly or indirectly, from releases of hazardous waste or hazardous constituents at the facility. The work plan shall also include:

   (a) A description and listing of persons, consultants and/or others who will be involved in conducting the remedial investigation;

   (b) A listing and description of tasks and subtasks to be contained in the remedial investigation, including a task to evaluate all records of all abandoned and active underground injection wells. This should include evaluation of construction, operation, and plugging of all Class I underground injection wells. Results of the evaluation including a description of all conditions discovered which could have resulted in a release, whether an actual release was documented or not, will be included in the remedial

investigation report;

(c) A sampling plan for the remedial investigation. The sampling plan will specify all samples (including splits, duplicates and field blanks) that will be taken during the remedial investigation. The sampling plan will specify in detail all Quality Assurance/Quality Control (QA/QC) procedures which will be carried out to ensure the reliability of the analytical data resulting from the remedial investigation, including sampling methods, sampling procedures, sample handling procedures and chain-of-custody procedures;

(d) A listing and schedule for completion of all reports that will result from the remedial investigation, including at a minimum, bi-monthly progress reports, a sampling report and draft and final remedial investigation reports.

3. The Permittee shall prepare and submit a remedial investigation report according to the schedule outlined in the remedial investigation work plan approved by the Regional Administrator. The remedial investigation report shall fully address the requirements of Condition VI.B.2., and shall include but is not limited to those requirements and the following:

   (a) Schedule for implementation of any interim corrective measures recommended in the remedial investigation report;

   (b) Schedule for development of corrective action work plan;

   (c) Recommendation, by an engineer with experience in hazardous waste site investigation and development of remedial actions, of the most effective remedial action alternative(s) for addressing each release or contamination problem.

4. Within ninety (90) days of EPA approval of the remedial investigation report, the Permittee shall prepare and submit for EPA review and approval a work plan for a corrective action report assessing the feasibility of corrective action alternatives. The alternatives shall be adequate to protect human health and the environment. The work plan shall include:

   (a) A description and listing of persons, consultants, and/or others who will be involved in evaluating the corrective action alternatives;

   (b) A listing and description of tasks and subtasks to be contained in the evaluation of corrective action alternatives, including tasks for:

      (i) Study of all available and technically feasible corrective action alternatives that could be undertaken to mitigate the releases of or contamination by hazardous wastes or hazardous constituents to groundwater;

(ii) Assessment, by a qualified engineer with experience in hazardous waste site investigation and development of remedial actions, of the likely effectiveness of each corrective action alternative examined in the corrective action report;

(c) Schedule for completion of corrective action report;

(d) A listing and schedule for completion of all reports that will result from the corrective action evaluation, including at a minimum, bi-monthly progress reports and draft and final corrective action reports.

5. The Permittee shall prepare and submit a corrective action report according to the schedule outlined in the corrective action work plan approved by the Regional Administrator. The corrective action report shall fully address the requirements of Condition VI.B.4., and shall include but is not limited to those requirements and the following:

(a) Schedule for implementation of corrective action;

(b) Schedule for addressing Conditions VI.E. and VI.F.

C. DETERMINATION OF OTHER MEDIA CORRECTIVE ACTION

1. Within sixty (60) calendar days of permit issuance, the Permittee shall develop and submit for EPA review and approval a work plan for investigating releases of hazardous waste or hazardous constituents to soil, surface water or drainage runoff pathways (including sediment) from any solid waste management unit. In addition to identification of prior or continuing releases, the work plan shall outline a remedial investigation characterization strategy sufficient to determine the nature and extent (both horizontal and vertical) of any releases of and/or contamination by any hazardous waste or hazardous constituent resulting from past practices at the facility. The work plan shall also include:

(a) A description and listing of persons, consultants and/or others who will be involved in conducting the investigation and developing the remedial investigation report;

(b) A listing and description of tasks and subtasks to be contained in the release investigation and remedial investigation reports including:

(i) Review of all information indicating prior or continuing releases or the potential for prior or continuing releases of hazardous waste or hazardous constituents from any solid waste management unit to soil, surface water, or drainage runoff pathways (including sediment);

(ii) Determination of need for and completion of field investigations, including sampling, to confirm the presence or absence of prior or continuing releases or the potential for prior or continuing releases;

(iii) A sampling plan for the remedial investigation. The sampling plan will specify all samples (including splits, duplicates and field blanks) that will be taken during the remedial investigation. The sampling plan will specify in detail all Quality Assurance/Quality Control (QA/QC) procedures which will be carried out to ensure the reliability of the analytical data resulting from the remedial investigation, including sampling methods, sampling procedures, sample handling procedures and chain-of-custody procedures;

(iv) A listing and schedule for completion of all reports that will result from the remedial investigation, including at a minimum, bi-monthly progress reports, a sampling report and draft and final remedial investigation reports.

2. The Permittee shall prepare and submit a remedial investigation report according to the schedule outlined in the work plan approved by the Regional Administrator. The remedial investigation report shall fully address requirements of Condition VI.C.1., and shall include but is not limited to those requirements and the following:

   (a) Schedule for implementation of any interim corrective measures recommended in the remedial investigation report;

   (b) Schedule for development of corrective action work plan;

   (c) Recommendation, by an engineer with experience in hazardous waste site investigation and development of remedial actions, of the most effective remedial action alternative(s) for addressing each release or contamination problem.

3. Within ninety (90) days of EPA approval of the remedial investigation report, the Permittee shall prepare and submit for EPA review and approval a work plan for a corrective action report assessing the feasibility of corrective action alternatives. The alternatives shall be adequate to protect human health and the environment. The work plan shall include:

   (a) A description and listing of persons, consultants and/or others who will be involved in evaluating the corrective action alternatives;

   (b) A listing and description of tasks and subtasks to be contained in the evaluation of corrective action alternatives including tasks for:

      (i) Study of all available and technically feasible corrective action alternatives that could be undertaken to mitigate the releases of or contamination by hazardous wastes or hazardous constituents;

(ii) Assessment, by a qualified engineer with experience in hazardous waste site investigation and development of remedial actions, of the likely effectiveness of each corrective action alternative examined in the corrective action report;

(c) Schedule for completion of the corrective action report;

(d) A listing and schedule for completion of all reports that will result from the corrective action evaluation, including at a minimum, bi-monthly progress reports and draft and final corrective action reports.

4. The Permittee shall prepare and submit a corrective action report according to the schedule outlined in the corrective action work plan approved by the Regional Administrator. The corrective action report shall fully address the requirements of Condition VI.C.3., and shall include but is not limited to those requirements and the following:

(a) Schedule for implementation of corrective action;

(b) Schedule for addressing Conditions VI.E. and VI.F.

5. The Permittee shall implement the approved air monitoring program required by the Kansas Department of Health and Environment Administrative Order dated January 28, 1986. Within sixty (60) days of completion of the air monitoring program or sixty (60) days after the data submitted documents releases of hazardous waste or hazardous constituents to the air, the Permittee shall submit a report describing the nature and extent of air releases from solid waste management units. This report shall address but not be limited to:

(a) Description of releases or potential releases to air from solid waste management units;

(b) Description of remedial investigation to fully characterize air releases from solid waste management units including air monitoring and/or air modeling, as appropriate;

(c) Schedule for completion of remedial investigation report;

(d) A sampling plan for the remedial investigation. The sampling plan will specify all samples (including splits, duplicates and field blanks) that will be taken during the remedial investigation. The sampling plan will specify in detail all Quality Assurance/Quality Control (QA/QC) procedures which will be carried out to ensure the reliability of the analytical data resulting from the remedial investigation, including sampling methods, sampling procedures, sample handling procedures and chain-of-custody procedures;

(e) A listing and schedule for completion of all reports that will result from the remedial investigation, including at a minimum, bi-monthly progress reports, a sampling report and draft and final remedial investigation reports.

6. The remedial investigation report shall be completed on a schedule approved by the Regional Administrator. The remedial investigation report shall fully address the requirements of Condition VI.C.5., but is not limited to those requirements and the following:

   (a) Schedule for implementation of any interim corrective measures recommended in the remedial investigation report;

   (b) Schedule for development of corrective action work plan;

   (c) Recommendation, by an engineer with experience in hazardous waste site investigation and development of remedial actions, of the most effective remedial action alternative(s) for addressing each air release or air contamination problem.

7. Within ninety (90) days of EPA approval of the remedial investigation report, the Permittee shall prepare and submit for EPA review and approval a work plan for a corrective action report assessing the feasibility of corrective action alternatives. The alternatives shall be adequate to protect human health and the environment. The work plan shall include:

   (a) A description and listing of persons, consultants and/or others who will be involved in evaluating the corrective action alternatives;

   (b) A listing and description of tasks and subtasks to be contained in the evaluation of corrective action alternatives including tasks for:

      (i) Study of all available and technically feasible corrective action alternatives that could be undertaken to mitigate the releases of or contamination by hazardous wastes or hazardous constituents of air from solid waste management units;

      (ii) Assessment, by a qualified engineer with experience in hazardous waste site investigation and development of remedial actions, of the likely effectiveness of each corrective action alternative examined in the corrective action report;

   (c) Schedule for completion of correction action report.

8. The Permittee shall prepare and submit a corrective action report according to the schedule outlined in the corrective action work plan approved by the Regional Administrator. The corrective action report shall fully address the requirements of Condition VI.C.7., but is not limited to those requirements and the following:

(a) Schedule for implementation of corrective action;

(b) Schedule for addressing Conditions VI.E. and VI.F.

D. COMPLIANCE SCHEDULE

1. Reports of compliance or non-compliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Failure to comply with this requirement is grounds for permit termination.

2. Bi-monthly progress reports shall be submitted to EPA on or before the fifteenth of each month, beginning with the first such date after the effective date of this permit. The bi-monthly progress reports will include at a minimum:

(a) A description of the actions taken during the preceeding 30 days toward achieving compliance with this permit;

(b) Results of field tests and other data received by the Permittee, other than laboratory deliverables;

(c) A list of all actions, data, plans, and reports scheduled for the next month;

(d) Any problems encountered during the previous month and any anticipated problems.

E. COST ESTIMATE FOR COMPLETION OF CORRECTIVE ACTION

1. Within thirty (30) days of approval of corrective action reports specified in Conditions VI.B.5., VI.C.4. and VI.C.8. of this permit, the Permittee shall prepare and submit for EPA review and approval a cost estimate for completion of any corrective action required under this permit for solid waste management units and regulated units in order to provide financial assurance for completion of corrective action as required under 40 CFR § 264.90(a)(2) and 264.101 and this permit.

F. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. Within thirty (30) days of approval of corrective action reports specified in Conditions VI.B.5., VI.C.4. and VI.C.8. of this permit, the Permittee shall demonstrate continuous compliance with 40 CFR § 264.90(a)(2) and 264.101 by providing documentation of financial assurance using a mechanism specified in 40 CFR § 264.151, in at least the amount of the cost estimate required under Condition VI.E.

G. PERMIT REOPENER

Sections I and through V of this permit may be modified, revoked, reissued, or terminated by the Kansas Department of Health and Environment for cause. Section VI of this permit may be modified, revoked, reissued or terminated by EPA for cause. For underground injection purposes, causes for modification, revocation, reissuance, or termination can include, but are not limited to, banning of any hazardous waste from deep well injection pursuant to HSWA § 201(f) and (g) and Safe Drinking Water Act (SDWA) amendments of 1986 including, but not limited to Section 1426(a).

H. PERMIT CONDITION MODIFICATIONS

Based upon EPA review of interim reports required under this section of the permit, EPA reserves the right to modify, add or delete permit condition requirements. EPA will notify the Permittee in writing of such changes and provide the Permittee reasonable time to perform.

I. PLAN APPROVAL/DISAPPROVAL

In the event of EPA disapproval (in whole or in part) of any plan, schedule or report required by this permit, EPA will specify any deficiencies in writing. The Permittee shall modify the plan, schedule or report to correct the deficiencies and have thirty (30) calendar days from receipt of written EPA disapproval to submit a modified plan, schedule, or report to EPA for approval.

Should the Permittee take exception (in whole or in part) to EPA's disapproval, the Permittee shall submit to EPA a written statement of the grounds for exception. Representatives of EPA and the Permittee may confer, in person or by telephone, in an attempt to resolve any disagreement. If agreement is reached, the resolution shall be written and signed by representatives of EPA and the Permittee. In the event that resolution is not reached within thirty (30) calendar days, the Permittee shall modify the plan, schedule or report as required by EPA.

J. CONFIDENTIAL INFORMATION

In accordance with 40 CFR 270.12, the Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR 270.12 as amended 50 Federal Register 51654 (December 18, 1985).

K. AVAILABILITY, RETENTION AND DISPOSITION OF RECORDS

1. In accordance with 40 CFR 264.74, the Permittee must furnish all required records, including plans, upon request and will make those records available at all reasonable times for inspection, by any officer, employee or representative of EPA who is duly designated by the Regional Administrator.

2. Unless otherwise specified, all records and/or copies thereof required to be maintained by the terms of this permit will be kept on-site for at least three years.

3. The retention period for all required records is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Regional Administrator.

L. INSPECTION AND ENTRY

In accordance with 40 CFR 270.30(i) the Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

1. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

Index to Attachments

(1) Additional specific requirements not included in the UIC permits are contained in the RCRA Part B Application. Compliance with the (UIC) conditions specified in the RCRA Part B Application is required for compliance with the RCRA Permit.

(2) Attachments II through VI are narrative and outline forms of the plans contained in the RCRA Part B Permit Application. All requirements specified in the RCRA Part B Application must be met for compliance with this permit.

ATTACHMENT I

UNDERGROUND INJECTION CONTROL (UIC)

PERMITS

Kansas Permit Number: KS-01-173-004

KANSAS UNDERGROUND INJECTION CONTROL PERMIT

Pursuant to the provisions of K.S.A. (65-164, 65-166, 65-170g and K.S.A. 1985 Supp. 65-165 and 65-171d) and Kansas Administrative Regulations (Chapter 28, Article 46),

Owner: Vulcan Chemicals

Owner's Address: P.O. Box 12283
Wichita, Kansas 67277

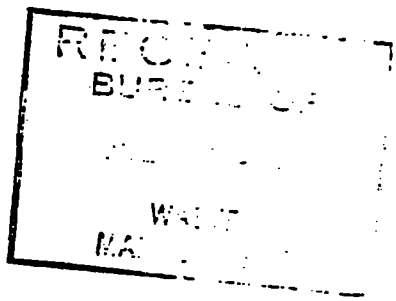
Telephone No.: 316-524-4211

Facility Name: Vulcan Chemicals

Facility Location: 6200 S. Ridge Road
Wichita, Kansas 67277

Well Location: W½ 27-T28S-R1W
Sedgwick County (Well #3)

Receiving Formation: Arbuckle



is authorized to inject liquid wastes from this facility, in accordance to the construction and monitoring requirements as set forth herein.

This permit shall become effective June 30, 1986, will supersede all previous permits and/or agreements in effect between the Kansas Department of Health and Environment and the permittee, and will expire June 30, 1991.

FACILITY DESCRIPTION:

Vulcan Chemicals is a chloroalkali and chlorosolvent manufacturing facility. Wastewaters from this facility consist of stormwater runoff, recovered groundwater and process wastewater. The wastewater consists primarily of sodium, calcium and magnesium chloride brines which vary in pH. The average chloride concentration of these brines is approximately 20,000 ppm. Trace organic compounds, soluble in brines, are also present. The fluids to be injected are considered hazardous by definition in the Resource Conservation and Recovery Act and K.S.A. 65-3430 et seq. and regulations adopted thereunder.

Secretary, Kansas Department of Health and Environment

6/30/86
Date

INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to inject stormwater runoff, recovered groundwater, and process wastewater originating from manufacturing activities as specified in the application for this permit. The injection fluid concentrations and the rate of injection shall become effective on the date(s) specified herein. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified. Monitoring reports shall be submitted monthly. The maximum allowable rate of injection is 504,000 gallons per day.

Injection Parameter(s)	INJECTION LIMITATIONS	MONITORING REQUIREMENTS
pH	No limit	Weekly
Total Organic Carbon	10,000 mg/l	Weekly
Chloride	No limit	Weekly
Temperature	No limit	Weekly
Antimony	*	Weekly
Chromium (III, VI)	*	Weekly
Volatile Organic Compounds	*	Weekly
Hexachlorinated Compounds	*	Weekly
Chlorinated Phenol Compounds	*	Weekly

*Injection limitations for the volatile organics, hexachlorinated compounds, chlorinated phenol compounds, antimony and chromium have been set by the Secretary (Attachment II). The Secretary has set injection limits by considering values 100 times applicable drinking water standards and values 100 times applicable 10^{-5} cancer risk levels, or other values necessary to prevent contamination of underground drinking water supplies, to protect the public health, and to take into account environmental considerations. The permittee shall be in compliance with the injection limitations as soon as possible but no later than two years from the date of permit approval. The permittee shall submit a report to the department within six months of permit approval detailing how exceeded injection limitations are to be met, with specific milestones for achieving these goals.

STANDARD CONDITIONS

In addition to the specified conditions stated herein, the permittee shall comply with the Attachment I.

SCHEDULE OF COMPLIANCE

All reports are to be submitted no later than 14 days following the last day of the month.

OTHER REQUIREMENTS

I. CONSTRUCTION REQUIREMENTS

A. Borehole, casing, tubing, and cement specifications for disposal well.

Bore Hole Size	Casing or Tubing Size and Material	Weight lbs/ft	Casing Seat Depth	Type of Cement	No. of Sacks of Cement
14-3/4 in	10-3/4 in steel	32.75	401 ft	Unknown	375
8-3/4 in	7 in steel	26	4124 ft	Unknown	1000
	4-1/2 in steel	--	3965 ft	---	---

B. Corrosion Protection: #2 Diesel fuel in annulus of the well between tubing string and long casing string. Average annulus pressure: 135 psi

C. Spill prevention and containment plan to be employed during the operation of the disposal well:

1. The well head is contained in a sump. Any spillage outside the sump will be collected in the Vulcan wastewater systems and returned to one of the other disposal wells on the plant site.

II. INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

A. The permittee is authorized to inject stormwater runoff, recovered groundwater and process wastewater originating from manufacturing activities as specified in the application for this permit. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified below. All reports are to be submitted to the department not later than fourteen days after the last day of the month in which such reports are due.

Kansas Permit Number: KS-01-173-008

KANSAS UNDERGROUND INJECTION CONTROL PERMIT

Pursuant to the provisions of K.S.A. (65-164, 65-166, 65-170g and K.S.A. 1985 Supp. 65-165 and 65-171d) and Kansas Administrative Regulations (Chapter 28, Article 46),

Owner: Vulcan Chemicals

Owner's Address: P.O. Box 12283
Wichita, Kansas 67277

Telephone No.: 316-524-4211

Facility Name: Vulcan Chemicals

Facility Location: 6200 S. Ridge Road
Wichita, Kansas 67277

Well Location: W½ 27-T28S-R1W
Sedgwick County (Well #9)

Receiving Formation: Arbuckle

is authorized to inject liquid wastes from this facility, in accordance to the construction and monitoring requirements as set forth herein.

This permit shall become effective June 30, 1986, will supersede all previous permits and/or agreements in effect between the Kansas Department of Health and Environment and the permittee, and will expire June 30, 1991.

FACILITY DESCRIPTION:

Vulcan Chemicals is a chloroalkali and chlorosolvent manufacturing facility. Wastewaters from this facility consist of stormwater runoff, recovered groundwater and process wastewater. The wastewater consists primarily of sodium, calcium and magnesium chloride brines which vary in pH. The average chloride concentration of these brines is approximately 20,000 ppm. Trace organic compounds, soluble in brines, are also present. The fluids to be injected are considered hazardous by definition in the Resource Conservation and Recovery Act and K.S.A. 65-3430 et seq. and regulations adopted thereunder.

Barbara Sabol

Secretary, Kansas Department of Health and Environment

6/30/86

Date

INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to inject stormwater runoff, recovered groundwater, and process wastewater originating from manufacturing activities as specified in the application for this permit. The injection fluid concentrations and the rate of injection shall become effective on the date(s) specified herein. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified. Monitoring reports shall be submitted monthly. The maximum allowable rate of injection is 504,000 gallons per day.

	INJECTION LIMITATIONS	MONITORING REQUIREMENTS
Injection Parameter(s)		
pH	No limit	Weekly
Total Organic Carbon	10,000 mg/l	Weekly
Chloride	No limit	Weekly
Temperature	No limit	Weekly
Antimony	*	Weekly
Chromium (III, VI)	*	Weekly
Volatile Organic Compounds	*	Weekly
Hexachlorinated Compounds	*	Weekly
Chlorinated Phenol Compounds	*	Weekly

*Injection limitations for the volatile organics, hexachlorinated compounds, chlorinated phenol compounds, antimony and chromium have been set by the Secretary (Attachment II). The Secretary has set injection limits by considering values 100 times applicable drinking water standards and values 100 times applicable 10^{-5} cancer risk levels, or other values necessary to prevent contamination of underground drinking water supplies, to protect the public health, and to take into account environmental considerations. The permittee shall be in compliance with the injection limitations as soon as possible but no later than two years from the date of permit approval. The permittee shall submit a report to the department within six months of permit approval detailing how exceeded injection limitations are to be met, with specific milestones for achieving these goals.

STANDARD CONDITIONS

In addition to the specified conditions stated herein, the permittee shall comply with the Attachment I.

SCHEDULE OF COMPLIANCE

All reports are to be submitted no later than 14 days following the last day of the month.

OTHER REQUIREMENTS

I. CONSTRUCTION REQUIREMENTS

A. Borehole, casing, tubing, and cement specifications for disposal well.

Bore Hole Size	Casing or Tubing Size and Material	Weight lbs/ft	Casing Seat Depth	Type of Cement	No. of Sacks of Cement
26 in	18 in steel	65	167	Pozmix	275
17-1/4 in	13-3/8 in steel	48	950	Howco Light Latex	550 150
12-1/4	9-5/8 in steel	--	3953	Howco Light Latex Second Stage	775 150 975
	4-1/2 fibercast	--	3980	---	--

B. Corrosion Protection: #2 Diesel fuel in annulus of the well between tubing string and long casing string. Average annulus pressure: 135 psi

C. Spill prevention and containment plan to be employed during the operation of the disposal well:

1. The well head is contained in a sump. Any spillage outside the sump will be collected in the Vulcan wastewater systems and returned to one of the other disposal wells on the plant site.

II. INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

A. The permittee is authorized to inject stormwater runoff, recovered groundwater and process wastewater originating from manufacturing activities as specified in the application for this permit. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified below. All reports are to be submitted to the department not later than fourteen days after the last day of the month in which such reports are due.

B. Only gravity pressure at the well head is to be used for injection.

C. Monitoring Requirements:

1. Daily Monitoring Requirements - Report Monthly

   a. Volume of flow - GPD (date and time recorded)*
   b. Rate of flow - GPM*
   c. Annulus pressure reading*
   d. Wellhead vacuum reading*
   e. Person in charge of making readings

   *These parameters shall be continuously monitored and records of such maintained in addition to the weekly average, minimum and maximum values of each.

2. Weekly Monitoring Requirements - Report Monthly

   a. Temperature of injection fluids prior to injection.

3. Weekly Analysis of Fluids to be Injected - Report Monthly

   a. pH
   b. Total Organic Carbon
   c. Chloride
   d. Volatile Organics
   e. Hexachlorinated Compounds
   f. Chlorinated Phenol Compounds
   g. Antimony
   h. Chromium (III, VI)

4. Annual Report

   a. Static fluid level of the Arbuckle formation
   b. Mechanical integrity test (every two years)

5. Reporting Requirements

   a. Any well treatment procedures used, including those associated with normal maintenance and malfunction correction

   b. Notice of abandonment and report of plugging

   c. Immediate notification of the department, if annulus pressure reduction is 25% or more

   d. Immediate notification of the department of all spills associated with operation of the injection well

e. Immediate notification of the department of any well malfunction or failure

D. STANDARD CONDITIONS

In addition to the specified conditions aforementioned, the permittee shall comply with the standard conditions which follow (Standard Conditions for Underground Injection Control Permits).

E. DEPARTMENTAL REVIEW

The department shall review the permit specifications and monitoring analyses to insure compliance of the permit conditions and to determine if the frequency and type of analyses is appropriate for characterization of the injected fluids. Modifications in the monitoring requirements may be made as deemed necessary by the department.

F. PLUGGING AND ABANDONMENT

The permittee shall conform to all plugging and abandonment requirements of the department in order that the movement of fluids either into an underground source of drinking water or from one underground source of drinking water to another shall not be allowed. The abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application have been approved by the department and any modifications to the abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application are subject to departmental approval.

G. SITE INSPECTIONS

The department shall make unannounced site inspections for the purpose of obtaining split samples and observing disposal well operations. The permittee waives objection to such inspections.

H. EVIDENCE OF FINANCIAL RESPONSIBILITY

Vulcan Chemicals has established the necessary financial assurance for the future plugging and abandonment of the disposal well by virtue of the information submitted to the KDHE. Vulcan Chemicals has satisified the plugging and abandonment financial requirements as outlined in 40 CFR Part 144 Subpart F.

Vulcan Chemicals has used the financial test and corporate guarantee method. The requirements of this method are met as follows:

1) The ratio of total liabilities to net worth is less than 2.0.
2) The ratio of the sum of net income plus depreciation, depletion, and amoritization of total liabilities is greater than 0.1.

3) The ratio of current assets to current liabilities is greater than 1.5.
4) The net working capital and tangible net worth are each at least six times the sum of the current plugging and abandonment cost estimate.
5) The tangible net worth exceeds $10 million.
6) The assets in the United States are at least six times the sum of current plugging and abandonment cost estimate.

I. ANNULUS PRESSURE REDUCTION

When an annulus pressure reduction of 25% or more occurs, the well is to be taken out of service immediately and the department notified. Any necessary remedial action is to be taken and the well pressure tested prior to being brought back into service. The pressure test is to be witnessed by the department.

J. MECHANICAL INTEGRITY TEST

Once every two years, Vulcan is to conduct a mechanical integrity test as follows:

1) Pull tubing string and visually inspect.
2) Set retrievable bridge plug or packer immediately above the injection zone and pressure test the casing at 200 psi for one hour. This test is to be witnessed by the department and is to be strictly a hydraulic fluid pressure test.
3) Replace tubing, load annulus, and conduct a pressure test as specified by the department. This test is to be witnessed by the department.
4) Run temperature log.

K. CHEMICAL ANALYSIS

The permittee shall submit to the department within three months of permit approval an analysis of the 129 priority pollutants (EPA Method 624 and 625), silver, arsenic, barium, cadmium, chromium, copper, lead, selenium, zinc, mercury, and any other analytical parameters needed to complete Attachment II. Modifications may be made to Attachment II based on a review of the data obtained.

L. PERMIT MODIFICATION

The injection limitations and monitoring requirements as specified in the permit are subject to departmental review and modification if deemed necessary.

ATTACHMENT I

STANDARD CONDITIONS FOR
UNDERGROUND INJECTION CONTROL PERMITS

CLASS I WELLS

I. Conditions Applicable to all Permits

A. Duty to Comply: The permittee must comply with all conditions of this permit, federal and State laws and regulations. Any permit noncompliance constitutes a violation of the appropriate Act or regulations and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification, or denial of a permit renewal application.

B. Duty to Reapply: If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. An application to renew this permit must be filed with KDHE at least 180 days prior to its expiration date.

C. Duty to Halt or Reduce Activity: It shall not be a defense for a permittee, in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate: The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

E. Proper Operation and Maintenance: The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

F. Permit Actions: This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

G. Property Rights: This permit does not convey any property rights of any sort, or any exclusive privilege.

H. Duty to Provide Information: The permittee shall furnish to the Secretary, within a reasonable time, any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit.

I. Inspection and Entry: The permittee shall allow the Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the appropriate act, any substances or parameters at any location.

J. Monitoring and Records:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of sample, measurement, report of application. This period may be extended by request of the Secretary at any time.

3. The permittee shall retain records concerning the nature and composition of all injected fluids until three (3) years after the completion of any plugging and abandonment procedures specified under K.A.R. 28-46-34. The Secretary may require the owner or operator to deliver the records to the Secretary at the conclusion of the retention period.

4. Records of monitoring information shall include:

   a. The date, exact place, and time of sampling or measurements;

   b. The individuals who performed the sampling or measurements;

   c. The date(s) analyses were preformed;

   d. The individual(s) who performed the analyses;

   e. The analytical techniques or methods used; and

   f. The results of such analyses.

K. Signatory Requirements: All applications, reports, or information submitted to the Secretary shall be signed and certified. (see K.A.R. 28-46-22).

L. Reporting Requirements:

1. Planned changes. The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility.

   Except for all new wells authorized by an area permit under K.A.R. 28-46-13, a new injection well may not commence injection until construction is complete, and;

   a. The permittee has submitted notice of completion of construction to the Secretary; and

   b. 1) The Secretary has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

      2) The permittee has not received notice from the Secretary of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph a. of this section, in which case prior inspection or review is waived and the permittee may commence injection. The Secretary shall allow for a reasonable time period in which the well shall be inspected.

2. Anticipated noncompliance The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. Transfers. This permit is not transferable to any person except after notice to the Secretary. The Secretary may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the appropriate Act. (See K.A.R. 28-46-14; in some cases, modification or revocation and reissuance is mandatory.)

4. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

5. Compliance schedules. Reports of compliance or noncompliance with, or any progress report on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

6. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or environment. Any information shall be provided orally within 24 hours from the time

the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following shall be reported within 24 hours:

a. Any monitoring or other information which indicates that any contaminant may cause an endangerment to a drinking water supply.

b. Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between drinking water supplies.

7. Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1), (4), (5), and (6) of this section at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (6) of this section.

8. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Secretary, it shall promptly submit such facts or information.

M. Additional Conditions

The permittee shall notify the Secretary at such times as the permit requires before conversion or abandonment of the well or in the case of area permits before closure of the project with the notice, the permittee shall submit a revised plugging and abandonment plan updated as appropriate in compliance with K.A.R. 28-46-34.

II. Other Permit Conditions

A. Individual Programs: In addition to conditions required in all permits, the Secretary shall establish conditions in permits as warranted on a case-by-case basis, to provide for and assure compliance with the applicable requirements of K.S.A. 65-164, 65-171d inclusive and Article 46 of the regulations.

B. Construction Requirements: Existing wells shall achieve compliance with such requirements according to a compliance schedule established as a permit condition. The owner or operator of a proposed new injection well shall submit plans for testing, drilling and construction as part of the permit application. Except as authorized by an area permit, no construction may commence until a permit has

been issued containing construction requirements (K.A.R. 28-46-29). be in compliance with these requirements of the permit application prior to commencing injection operations. Changes in construction plans during construction may be approved by the Secretary as minor modifications (K.A.R. 28-46-17). No such changes may be physically incorporated into construction of the well prior to approval of the modification by the Secretary.

C. Operation Requirements

1. The operator of a well shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. The operator shall have the burden of showing the requirements of this paragraph are met.

2. If any water quality monitoring of an underground source of drinking water indicates the movement of any contaminant into the underground source of drinking water, except as authorized. additional construction, corrective action, operation and monitoring requirements, or reporting (including closure of the injection well) will be required if necessary to prevent such movement.

   a. Take such actions (including where required closure of injection well) as may be necessary to prevent the violation.

D. Requirements for Wells Managing Hazardous Wastes

1. Applicability. The regulations in this section apply to all generators of hazardous waste, and to the owners or operators of all hazardous waste management facilities, using any class of well to inject hazardous wastes accompanied by a manifest.

2. Authorization. The owners or operator of any well that is used to inject hazardous wastes accompanied by a manifest or delivery document shall apply for authorization to inject as specified in K.A.R. 28-46-5 with (6) months after the approval of an applicable State program.

3. Requirements. In addition to meeting applicable requirements of Article 46, the permittee shall, for each facility meeting the requirements of paragraph 2. of this section comply with the following:

   a. Notification requirements of Section 3010 of P.L. 94-580.

   b. Identification number requirements of 40 CFR Sec. 264.11.

   c. Manifest system, the applicable recordkeeping and reporting requirements for manifested wastes in 40 CFR Sec. 264.71.

d. Manifest discrepancies as in 40 CFR Sec. 264.72.

e. Operating record as in 40 CFR Sec. 264.73(a), (b) (1), and (b) (2).

f. Annual report as in 40 CFR Sec. 264.75.

g. Personnel training applicable personnel training requirements of 40 CFR Sec. 264.16.

h. Certification of closure, when abandonment is completed, the permittee must submit to the Secretary certification by the owner or operator and certification by an independent registered professional engineer that the facility has been closed in accordance with the specifications in K.A.R. 28-46-9.

E. Monitoring and Reporting Requirements

1. Class I wells.

a. Monitoring requirements shall, at a minimum, include:

1) The analysis of the injected fluids with sufficient frequency to yield representative data of their characteristics;

2) Installation and use of continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between the tubing and the long string of casing;

3) A demonstration of mechanical integrity pursuant to K.A.R. 28-46-33 at least once every five (5) years during the life of the well; and

4) The type, number and location of wells within the area of review to be used to monitor any migration of fluids into and pressure in the underground sources of drinking water, the parameters to be measured and the frequency of monitoring.

b. Reporting requirements shall at a minimum include:

1) Quarterly reports to the Secretary on:

a) The physical, chemical and other relevant characteristics of injection fluids;

b) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure; and

c) The results of monitoring.

2) Reporting the results, with the first quarterly report after the completion of:

a) Periodic tests of mechanical integrity;

b) Any other test of the injection well conducted by the permittee if required by the Secretary; and

c) Any well work over.

F. Plugging and Abandonment

1. Unless indicated prior to abandoning Class I wells shall be plugged with cement in a manner which will not allow the movement of fluids either into or between underground sources of drinking water.

2. Placement of the cement plugs shall be accomplished by one of the following:

a. The Balance Method;

b. An alternative method approved by the Secretary, which will reliably provide a comparable level of protection to underground sources of drinking water.

3. The well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method prescribed by the Secretary, prior to the placement of the cement plug(s).

4. The plugging and abandonment plan required in K.A.R. 28-46-34 shall also demonstrate adequate protection of drinking water supplies. The Secretary shall prescribe aquifer cleanup and monitoring where deemed necessary and feasible to insure adequate protection of drinking water supplies.

G. Financial Responsibility

The permittee must show evidence of financial responsibility and resources to close, plug, and abandon the underground injection well in a manner prescribed by the Secretary. This shall be shown by the submission of a surety bond, or other adequate assurance, such as financial statements or other materials acceptable to the Secretary.

H. Mechanical Integrity

No permit for any well will be granted until the permittee shows to the satisfaction of the Secretary under K.A.R. 28-46-33 that the well has mechanical integrity.

I. Additional Conditions

The permittee on a case-by-case basis may receive additional conditions as necessary to prevent the migration of fluids into underground sources of drinking water.

BASE NEUTRALS (ug/l)		
hexachlorobenzene	20	EPA
hexachlorobutadiene	450	EPA
hexachloroethane	2500	EPA
PESTICIDES (ug/l)		
a-BHC	330	EPA
b-BHC	120	EPA
d-BHC	5	KDHE
g-BHC (main lindane isomer)	26.5	EPA
ACID EXTRACTABLES (ug/l)		
2,4-dichlorophenol	70000	EPA
2,4,6-trichlorophenol	1700	EPA
o-chlorophenol	10	F#
pentachlorophenol	2100	EPA
phenol	350000	F
METALS (ug/l)		
antimony	14600	F
chromium (III)	5000	B
chromium (VI)	5000	B
OTHER PARAMETERS (units)		
chloride (mg/l)	---	---
pH (su)	---	---
temperature (C)	---	---
1,2-cis-dichloroethylene (ug/l)	7	PR

FOOTNOTES

KNL- KANSAS NOTIFICATION LEVEL (KDHE INTERIM VOC STRATEGY; APRIL 1985)
F - EPA WATER QUALITY CRITERIA (FRL 1623-3, 28 NOV. 80)
F@ - SAME AS F, BUT AT 10-5 CANCER RISK RATE.
F# - SAME AS F, BUT ORGANOLEPTIC CRITERIA.
D - ENVIRONMENTAL CANADA, 1979. WATER QUALITY SOURCEBOOK, A GUIDE TO WATER QUALITY PARAMETERS.
PR - PROPOSED RECOMMENDED MAXIMUM CONCENTRATION LEVEL (40 CFR 141, November 13, 1985).
KAL - KANSAS ACTION LEVEL (KDHE INTERIM VOC STRATEGY; APRIL 1985).
B - KANSAS DRINKING WATER STANDARDS.
G - USEPA FINAL RULE, 40 CFR 141, FRL 1312-2, 7 FEB. 84).
H - USEPA AMBIENT WATER QUALITY CRITERIA, EPA-440/5-84-007.
C - WATER QUALITY CRITERIA (NAS, NAE; USEPA, 1972; BLUE BOOK).
E - QUALITY CRITERIA FOR WATER (USEPA, 1976; RED BOOK).
EPA - EPA HEALTH ADVISORIES.
EPAL - EPA LABORATORY CRITERIA 40 CFR 136, OCT. 26, 1984
KDHE - KDHE LABORATORY DETECTION LIMITS.

B. Only gravity pressure at the well head is to be used for injection.

C. Monitoring Requirements:

1. Daily Monitoring Requirements - Report Monthly

   a. Volume of flow - GPD (date and time recorded)*
   b. Rate of flow - GPM*
   c. Annulus pressure reading*
   d. Wellhead vacuum reading*
   e. Person in charge of making readings

   *These parameters shall be continuously monitored and records of such maintained in addition to the weekly average, minimum and maximum values of each.

2. Weekly Monitoring Requirements - Report Monthly

   a. Temperature of injection fluids prior to injection.

3. Weekly Analysis of Fluids to be Injected - Report Monthly

   a. pH
   b. Total Organic Carbon
   c. Chloride
   d. Volatile Organics
   e. Hexachlorinated Compounds
   f. Chlorinated Phenol Compounds
   g. Antimony
   h. Chromium (III, VI)

4. Annual Report

   a. Static fluid level of the Arbuckle formation
   b. Mechanical integrity test (every two years)

5. Reporting Requirements

   a. Any well treatment procedures used, including those associated with normal maintenance and malfunction correction

   b. Notice of abandonment and report of plugging

   c. Immediate notification of the department, if annulus pressure reduction is 25% or more

   d. Immediate notification of the department of all spills associated with operation of the injection well

e. Immediate notification of the department of any well malfunction or failure

D. STANDARD CONDITIONS

In addition to the specified conditions aforementioned, the permittee shall comply with the standard conditions which follow (Standard Conditions for Underground Injection Control Permits).

E. DEPARTMENTAL REVIEW

The department shall review the permit specifications and monitoring analyses to insure compliance of the permit conditions and to determine if the frequency and type of analyses is appropriate for characterization of the injected fluids. Modifications in the monitoring requirements may be made as deemed necessary by the department.

F. PLUGGING AND ABANDONMENT

The permittee shall conform to all plugging and abandonment requirements of the department in order that the movement of fluids either into an underground source of drinking water or from one underground source of drinking water to another shall not be allowed. The abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application have been approved by the department and any modifications to the abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application are subject to departmental approval.

G. SITE INSPECTIONS

The department shall make unannounced site inspections for the purpose of obtaining split samples and observing disposal well operations. The permittee waives objection to such inspections.

H. EVIDENCE OF FINANCIAL RESPONSIBILITY

Vulcan Chemicals has established the necessary financial assurance for the future plugging and abandonment of the disposal well by virtue of the information submitted to the KDHE. Vulcan Chemicals has satisified the plugging and abandonment financial requirements as outlined in 40 CFR Part 144 Subpart F.

Vulcan Chemicals has used the financial test and corporate guarantee method. The requirements of this method are met as follows:

1) The ratio of total liabilities to net worth is less than 2.0.
2) The ratio of the sum of net income plus depreciation, depletion, and amoritization of total liabilities is greater than 0.1.

3) The ratio of current assets to current liabilities is greater than 1.5.
4) The net working capital and tangible net worth are each at least six times the sum of the current plugging and abandonment cost estimate.
5) The tangible net worth exceeds $10 million.
6) The assets in the United States are at least six times the sum of current plugging and abandonment cost estimate.

I. ANNULUS PRESSURE REDUCTION

When an annulus pressure reduction of 25% or more occurs, the well is to be taken out of service immediately and the department notified. Any necessary remedial action is to be taken and the well pressure tested prior to being brought back into service. The pressure test is to be witnessed by the department.

J. MECHANICAL INTEGRITY TEST

Once every two years, Vulcan is to conduct a mechanical integrity test as follows:

1) Pull tubing string and visually inspect.
2) Set retrievable bridge plug or packer immediately above the injection zone and pressure test the casing at 200 psi for one hour. This test is to be witnessed by the department and is to be strictly a hydraulic fluid pressure test.
3) Replace tubing, load annulus, and conduct a pressure test as specified by the department. This test is to be witnessed by the department.
4) Run temperature log.

K. CHEMICAL ANALYSIS

The permittee shall submit to the department within three months of permit approval an analysis of the 129 priority pollutants (EPA Method 624 and 625), silver, arsenic, barium, cadmium, chromium, copper, lead, selenium, zinc, mercury, and any other analytical parameters needed to complete Attachment II. Modifications may be made to Attachment II based on a review of the data obtained.

L. PERMIT MODIFICATION

The injection limitations and monitoring requirements as specified in the permit are subject to departmental review and modification if deemed necessary.

Kansas Permit Number: KS-01-173-005

KANSAS UNDERGROUND INJECTION CONTROL PERMIT

Pursuant to the provisions of K.S.A. (65-164, 65-166, 65-170g and K.S.A. 1985 Supp. 65-165 and 65-171d) and Kansas Administrative Regulations (Chapter 28, Article 46),

Owner: Vulcan Chemicals

Owner's Address: P.O. Box 12283
Wichita, Kansas 67277

Telephone No.: 316-524-4211

Facility Name: Vulcan Chemicals

Facility Location: 6200 S. Ridge Road
Wichita, Kansas 67277

Well Location: W½ 27-T28S-R1W
Sedgwick County (Well #4)

Receiving Formation: Arbuckle

is authorized to inject liquid wastes from this facility, in accordance to the construction and monitoring requirements as set forth herein.

This permit shall become effective June 30, 1986, will supersede all previous permits and/or agreements in effect between the Kansas Department of Health and Environment and the permittee, and will expire June 30, 1991.

FACILITY DESCRIPTION:

Vulcan Chemicals is a chloroalkali and chlorosolvent manufacturing facility. Wastewaters from this facility consist of stormwater runoff, recovered groundwater and process wastewater. The wastewater consists primarily of sodium, calcium and magnesium chloride brines which vary in pH. The average chloride concentration of these brines is approximately 20,000 ppm. Trace organic compounds, soluble in brines, are also present. The fluids to be injected are considered hazardous by definition in the Resource Conservation and Recovery Act and K.S.A. 65-3430 et seq. and regulations adopted thereunder.

Secretary, Kansas Department of Health and Environment

6/30/86
Date

INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to inject stormwater runoff, recovered groundwater, and process wastewater originating from manufacturing activities as specified in the application for this permit. The injection fluid concentrations and the rate of injection shall become effective on the date(s) specified herein. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified. Monitoring reports shall be submitted monthly. The maximum allowable rate of injection is 504,000 gallons per day.

	INJECTION LIMITATIONS	MONITORING REQUIREMENTS
Injection Parameter(s)		
pH	No limit	Weekly
Total Organic Carbon	10,000 mg/l	Weekly
Chloride	No limit	Weekly
Temperature	No limit	Weekly
Antimony	*	Weekly
Chromium (III, VI)	*	Weekly
Volatile Organic Compounds	*	Weekly
Hexachlorinated Compounds	*	Weekly
Chlorinated Phenol Compounds	*	Weekly

*Injection limitations for the volatile organics, hexachlorinated compounds, chlorinated phenol compounds, antimony and chromium have been set by the Secretary (Attachment II). The Secretary has set injection limits by considering values 100 times applicable drinking water standards and values 100 times applicable 10^{-5} cancer risk levels, or other values necessary to prevent contamination of underground drinking water supplies, to protect the public health, and to take into account environmental considerations. The permittee shall be in compliance with the injection limitations as soon as possible but no later than two years from the date of permit approval. The permittee shall submit a report to the department within six months of permit approval detailing how exceeded injection limitations are to be met, with specific milestones for achieving these goals.

STANDARD CONDITIONS

In addition to the specified conditions stated herein, the permittee shall comply with the Attachment I.

SCHEDULE OF COMPLIANCE

All reports are to be submitted no later than 14 days following the last day of the month.

OTHER REQUIREMENTS

I. CONSTRUCTION REQUIREMENTS

A. Borehole, casing, tubing, and cement specifications for disposal well.

Bore Hole Size	Casing or Tubing Size and Material	Weight lbs/ft	Casing Seat Depth	Type of Cement	No. of Sacks of Cement
22 in	16 in steel	65	163.56	Pozmix	290
15 in	10-3/4 in steel	40	939	Pozmix Pozmix Pozmix	150 150 175
9 in	7 in steel	26	3970	Haliburton Light Latex Cement Haliburton Light	950 145 250
	4-1/2 fibercast	--	3964	---	---

B. Corrosion Protection: #2 Diesel fuel in annulus of the well between tubing string and long casing string. Average annulus pressure: 140 psi

C. Spill prevention and containment plan to be employed during the operation of the disposal well:

1. The well head is contained in a sump. Any spillage outside the sump will be collected in the Vulcan wastewater systems and returned to one of the other disposal wells on the plant site.

II. INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

A. The permittee is authorized to inject stormwater runoff, recovered groundwater and process wastewater originating from manufacturing activities as specified in the application for this permit. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified below. All reports are to be submitted to the department not later than fourteen days after the last day of the month in which such reports are due.

B. Only gravity pressure at the well head is to be used for injection.

C. Monitoring Requirements:

1. Daily Monitoring Requirements - Report Monthly

   a. Volume of flow - GPD (date and time recorded)*
   b. Rate of flow - GPM*
   c. Annulus pressure reading*
   d. Wellhead vacuum reading*
   e. Person in charge of making readings

   *These parameters shall be continuously monitored and records of such maintained in addition to the weekly average, minimum and maximum values of each.

2. Weekly Monitoring Requirements - Report Monthly

   a. Temperature of injection fluids prior to injection.

3. Weekly Analysis of Fluids to be Injected - Report Monthly

   a. pH
   b. Total Organic Carbon
   c. Chloride
   d. Volatile Organics
   e. Hexachlorinated Compounds
   f. Chlorinated Phenol Compounds
   g. Antimony
   h. Chromium (III, VI)

4. Annual Report

   a. Static fluid level of the Arbuckle formation
   b. Mechanical integrity test (every two years)

5. Reporting Requirements

   a. Any well treatment procedures used, including those associated with normal maintenance and malfunction correction

   b. Notice of abandonment and report of plugging

   c. Immediate notification of the department, if annulus pressure reduction is 25% or more

   d. Immediate notification of the department of all spills associated with operation of the injection well

e. Immediate notification of the department of any well malfunction or failure

D. STANDARD CONDITIONS

In addition to the specified conditions aforementioned, the permittee shall comply with the standard conditions which follow (Standard Conditions for Underground Injection Control Permits).

E. DEPARTMENTAL REVIEW

The department shall review the permit specifications and monitoring analyses to insure compliance of the permit conditions and to determine if the frequency and type of analyses is appropriate for characterization of the injected fluids. Modifications in the monitoring requirements may be made as deemed necessary by the department.

F. PLUGGING AND ABANDONMENT

The permittee shall conform to all plugging and abandonment requirements of the department in order that the movement of fluids either into an underground source of drinking water or from one underground source of drinking water to another shall not be allowed. The abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application have been approved by the department and any modifications to the abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application are subject to departmental approval.

G. SITE INSPECTIONS

The department shall make unannounced site inspections for the purpose of obtaining split samples and observing disposal well operations. The permittee waives objection to such inspections.

H. EVIDENCE OF FINANCIAL RESPONSIBILITY

Vulcan Chemicals has established the necessary financial assurance for the future plugging and abandonment of the disposal well by virtue of the information submitted to the KDHE. Vulcan Chemicals has satisified the plugging and abandonment financial requirements as outlined in 40 CFR Part 144 Subpart F.

Vulcan Chemicals has used the financial test and corporate guarantee method. The requirements of this method are met as follows:

1) The ratio of total liabilities to net worth is less than 2.0.
2) The ratio of the sum of net income plus depreciation, depletion, and amoritization of total liabilities is greater than 0.1.

3) The ratio of current assets to current liabilities is greater than 1.5.
4) The net working capital and tangible net worth are each at least six times the sum of the current plugging and abandonment cost estimate.
5) The tangible net worth exceeds $10 million.
6) The assets in the United States are at least six times the sum of current plugging and abandonment cost estimate.

I. ANNULUS PRESSURE REDUCTION

When an annulus pressure reduction of 25% or more occurs, the well is to be taken out of service immediately and the department notified. Any necessary remedial action is to be taken and the well pressure tested prior to being brought back into service. The pressure test is to be witnessed by the department.

J. MECHANICAL INTEGRITY TEST

Once every two years, Vulcan is to conduct a mechanical integrity test as follows:

1) Pull tubing string and visually inspect.
2) Set retrievable bridge plug or packer immediately above the injection zone and pressure test the casing at 200 psi for one hour. This test is to be witnessed by the department and is to be strictly a hydraulic fluid pressure test.
3) Replace tubing, load annulus, and conduct a pressure test as specified by the department. This test is to be witnessed by the department.
4) Run temperature log.

K. CHEMICAL ANALYSIS

The permittee shall submit to the department within three months of permit approval an analysis of the 129 priority pollutants (EPA Method 624 and 625), silver, arsenic, barium, cadmium, chromium, copper, lead, selenium, zinc, mercury, and any other analytical parameters needed to complete Attachment II. Modifications may be made to Attachment II based on a review of the data obtained.

L. PERMIT MODIFICATION

The injection limitations and monitoring requirements as specified in the permit are subject to departmental review and modification if deemed necessary.

Kansas Permit Number: KS-01-173-006

KANSAS UNDERGROUND INJECTION CONTROL PERMIT

Pursuant to the provisions of K.S.A. (65-164, 65-166, 65-170g and K.S.A. 1985 Supp. 65-165 and 65-171d) and Kansas Administrative Regulations (Chapter 28, Article 46),

Owner: Vulcan Chemicals

Owner's Address: P.O. Box 12283
Wichita, Kansas 67277

Telephone No.: 316-524-4211

Facility Name: Vulcan Chemicals

Facility Location: 6200 S. Ridge Road
Wichita, Kansas 67277

Well Location: W½ 27-T28S-R1W
Sedgwick County (Well #7)

Receiving Formation: Arbuckle

is authorized to inject liquid wastes from this facility, in accordance to the construction and monitoring requirements as set forth herein.

This permit shall become effective June 30, 1986, will supersede all previous permits and/or agreements in effect between the Kansas Department of Health and Environment and the permittee, and will expire June 30, 1991.

FACILITY DESCRIPTION:

Vulcan Chemicals is a chloroalkali and chlorosolvent manufacturing facility. Wastewaters from this facility consist of stormwater runoff, recovered groundwater and process wastewater. The wastewater consists primarily of sodium, calcium and magnesium chloride brines which vary in pH. The average chloride concentration of these brines is approximately 20,000 ppm. Trace organic compounds, soluble in brines, are also present. The fluids to be injected are considered hazardous by definition in the Resource Conservation and Recovery Act and K.S.A. 65-3430 et. seq. and regulations adopted thereunder.

Secretary, Kansas Department of Health and Environment

6/30/86
Date

INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to inject stormwater runoff, recovered groundwater, and process wastewater originating from manufacturing activities as specified in the application for this permit. The injection fluid concentrations and the rate of injection shall become effective on the date(s) specified herein. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified. Monitoring reports shall be submitted monthly. The maximum allowable rate of injection is 504,000 gallons per day.

Injection Parameter(s)	INJECTION LIMITATIONS	MONITORING REQUIREMENTS
pH	No limit	Weekly
Total Organic Carbon	10,000 mg/l	Weekly
Chloride	No limit	Weekly
Temperature	No limit	Weekly
Antimony	*	Weekly
Chromium (III, VI)	*	Weekly
Volatile Organic Compounds	*	Weekly
Hexachlorinated Compounds	*	Weekly
Chlorinated Phenol Compounds	*	Weekly

*Injection limitations for the volatile organics, hexachlorinated compounds, chlorinated phenol compounds, antimony and chromium have been set by the Secretary (Attachment II). The Secretary has set injection limits by considering values 100 times applicable drinking water standards and values 100 times applicable 10^{-5} cancer risk levels, or other values necessary to prevent contamination of underground drinking water supplies, to protect the public health, and to take into account environmental considerations. The permittee shall be in compliance with the injection limitations as soon as possible but no later than two years from the date of permit approval. The permittee shall submit a report to the department within six months of permit approval detailing how exceeded injection limitations are to be met, with specific milestones for achieving these goals.

STANDARD CONDITIONS

In addition to the specified conditions stated herein, the permittee shall comply with the Attachment I.

SCHEDULE OF COMPLIANCE

All reports are to be submitted no later than 14 days following the last day of the month.

OTHER REQUIREMENTS

I. CONSTRUCTION REQUIREMENTS

A. Borehole, casing, tubing, and cement specifications for disposal well.

Bore Hole Size	Casing or Tubing Size and Material	Weight lbs/ft	Casing Seat Depth	Type of Cement	No. of Sacks of Cement
22 in	16 in steel	50	156	Pozmix	300
14-3/4 in	10-3/4 in steel	40.5	981	Pozmix	900
8-3/4 in	7 in steel	26	3950	Latex Haliburton Light Haliburton Light Pozmix 1	150 1200 400 40
	4-1/2 in fibercast	--	3959	---	---

B. Corrosion Protection: #2 Diesel fuel in annulus of the well between tubing string and long casing string. Average annulus pressure: 145 psi

C. Spill prevention and containment plan to be employed during the operation of the disposal well:

1. The well head is contained in a sump. Any spillage outside the sump will be collected in the Vulcan wastewater systems and returned to one of the other disposal wells on the plant site.

II. INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

A. The permittee is authorized to inject stormwater runoff, recovered groundwater and process wastewater originating from manufacturing activities as specified in the application for this permit. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified below. All reports are to be submitted to the department not later than fourteen days after the last day of the month in which such reports are due.

B. Only gravity pressure at the well head is to be used for injection.

C. Monitoring Requirements:

1. Daily Monitoring Requirements - Report Monthly

   a. Volume of flow - GPD (date and time recorded)*
   b. Rate of flow - GPM*
   c. Annulus pressure reading*
   d. Wellhead vacuum reading*
   e. Person in charge of making readings

   *These parameters shall be continuously monitored and records of such maintained in addition to the weekly average, minimum and maximum values of each.

2. Weekly Monitoring Requirements - Report Monthly

   a. Temperature of injection fluids prior to injection.

3. Weekly Analysis of Fluids to be Injected - Report Monthly

   a. pH
   b. Total Organic Carbon
   c. Chloride
   d. Volatile Organics
   e. Hexachlorinated Compounds
   f. Chlorinated Phenol Compounds
   g. Antimony
   h. Chromium (III, VI)

4. Annual Report

   a. Static fluid level of the Arbuckle formation
   b. Mechanical integrity test (every two years)

5. Reporting Requirements

   a. Any well treatment procedures used, including those associated with normal maintenance and malfunction correction

   b. Notice of abandonment and report of plugging

   c. Immediate notification of the department, if annulus pressure reduction is 25% or more

   d. Immediate notification of the department of all spills associated with operation of the injection well

e. Immediate notification of the department of any well malfunction or failure

D. STANDARD CONDITIONS

In addition to the specified conditions aforementioned, the permittee shall comply with the standard conditions which follow (Standard Conditions for Underground Injection Control Permits).

E. DEPARTMENTAL REVIEW

The department shall review the permit specifications and monitoring analyses to insure compliance of the permit conditions and to determine if the frequency and type of analyses is appropriate for characterization of the injected fluids. Modifications in the monitoring requirements may be made as deemed necessary by the department.

F. PLUGGING AND ABANDONMENT

The permittee shall conform to all plugging and abandonment requirements of the department in order that the movement of fluids either into an underground source of drinking water or from one underground source of drinking water to another shall not be allowed. The abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application have been approved by the department and any modifications to the abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application are subject to departmental approval.

G. SITE INSPECTIONS

The department shall make unannounced site inspections for the purpose of obtaining split samples and observing disposal well operations. The permittee waives objection to such inspections.

H. EVIDENCE OF FINANCIAL RESPONSIBILITY

Vulcan Chemicals has established the necessary financial assurance for the future plugging and abandonment of the disposal well by virtue of the information submitted to the KDHE. Vulcan Chemicals has satisified the plugging and abandonment financial requirements as outlined in 40 CFR Part 144 Subpart F.

Vulcan Chemicals has used the financial test and corporate guarantee method. The requirements of this method are met as follows:

1) The ratio of total liabilities to net worth is less than 2.0.
2) The ratio of the sum of net income plus depreciation, depletion, and amoritization of total liabilities is greater than 0.1.

3) The ratio of current assets to current liabilities is greater than 1.5.
4) The net working capital and tangible net worth are each at least six times the sum of the current plugging and abandonment cost estimate.
5) The tangible net worth exceeds $10 million.
6) The assets in the United States are at least six times the sum of current plugging and abandonment cost estimate.

I. ANNULUS PRESSURE REDUCTION

When an annulus pressure reduction of 25% or more occurs, the well is to be taken out of service immediately and the department notified. Any necessary remedial action is to be taken and the well pressure tested prior to being brought back into service. The pressure test is to be witnessed by the department.

J. MECHANICAL INTEGRITY TEST

Once every two years, Vulcan is to conduct a mechanical integrity test as follows:

1) Pull tubing string and visually inspect.
2) Set retrievable bridge plug or packer immediately above the injection zone and pressure test the casing at 200 psi for one hour. This test is to be witnessed by the department and is to be strictly a hydraulic fluid pressure test.
3) Replace tubing, load annulus, and conduct a pressure test as specified by the department. This test is to be witnessed by the department.
4) Run temperature log.

K. CHEMICAL ANALYSIS

The permittee shall submit to the department within three months of permit approval an analysis of the 129 priority pollutants (EPA Method 624 and 625), silver, arsenic, barium, cadmium, chromium, copper, lead, selenium, zinc, mercury, and any other analytical parameters needed to complete Attachment II. Modifications may be made to Attachment II based on a review of the data obtained.

L. PERMIT MODIFICATION

The injection limitations and monitoring requirements as specified in the permit are subject to departmental review and modification if deemed necessary.

Kansas Permit Number: KS-01-173-007

KANSAS UNDERGROUND INJECTION CONTROL PERMIT

Pursuant to the provisions of K.S.A. (65-164, 65-166, 65-170g and K.S.A. 1985 Supp. 65-165 and 65-171d) and Kansas Administrative Regulations (Chapter 28, Article 46),

Owner: Vulcan Chemicals

Owner's Address: P.O. Box 12283
Wichita, Kansas 67277

Telephone No.: 316-524-4211

Facility Name: Vulcan Chemicals

Facility Location: 6200 S. Ridge Road
Wichita, Kansas 67277

Well Location: W½ 27-T28S-R1W
Sedgwick County (Well #8)

Receiving Formation: Arbuckle

is authorized to inject liquid wastes from this facility, in accordance to the construction and monitoring requirements as set forth herein.

This permit shall become effective June 30, 1986, will supersede all previous permits and/or agreements in effect between the Kansas Department of Health and Environment and the permittee, and will expire June 30, 1991.

FACILITY DESCRIPTION:

Vulcan Chemicals is a chloroalkali and chlorosolvent manufacturing facility. Wastewaters from this facility consist of stormwater runoff, recovered groundwater and process wastewater. The wastewater consists primarily of sodium, calcium and magnesium chloride brines which vary in pH. The average chloride concentration of these brines is approximately 20,000 ppm. Trace organic compounds, soluble in brines, are also present. The fluids to be injected are considered hazardous by definition in the Resource Conservation and Recovery Act and K.S.A. 65-3430 et seq. and regulations adopted thereunder.

Secretary, Kansas Department of Health and Environment

6/30/86
Date

INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to inject stormwater runoff, recovered groundwater, and process wastewater originating from manufacturing activities as specified in the application for this permit. The injection fluid concentrations and the rate of injection shall become effective on the date(s) specified herein. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified. Monitoring reports shall be submitted monthly. The maximum allowable rate of injection is 504,000 gallons per day.

Injection Parameter(s)	INJECTION LIMITATIONS	MONITORING REQUIREMENTS
pH	No limit	Weekly
Total Organic Carbon	10,000 mg/l	Weekly
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Temperature	No limit	Weekly
Antimony	*	Weekly
Chromium (III, VI)	*	Weekly
Volatile Organic Compounds	*	Weekly
Hexachlorinated Compounds	*	Weekly
Chlorinated Phenol Compounds	*	Weekly

*Injection limitations for the volatile organics, hexachlorinated compounds, chlorinated phenol compounds, antimony and chromium have been set by the Secretary (Attachment II). The Secretary has set injection limits by considering values 100 times applicable drinking water standards and values 100 times applicable 10^{-5} cancer risk levels, or other values necessary to prevent contamination of underground drinking water supplies, to protect the public health, and to take into account environmental considerations. The permittee shall be in compliance with the injection limitations as soon as possible but no later than two years from the date of permit approval. The permittee shall submit a report to the department within six months of permit approval detailing how exceeded injection limitations are to be met, with specific milestones for achieving these goals.

STANDARD CONDITIONS

In addition to the specified conditions stated herein, the permittee shall comply with the Attachment I.

SCHEDULE OF COMPLIANCE

All reports are to be submitted no later than 14 days following the last day of the month.

OTHER REQUIREMENTS

I. CONSTRUCTION REQUIREMENTS

A. Borehole, casing, tubing, and cement specifications for disposal well.

Bore Hole Size	Casing or Tubing Size and Material	Weight lbs/ft	Casing Seat Depth	Type of Cement	No. of Sacks of Cement
26 in	18 in steel	65	161	Pozmix	275
17-1/4 in	10-3/8 in steel	48	959	Howco Light Latex	550 150
12-1/4 in	9-5/8 in steel	36	3947	Howco Light Latex Latex	750 150 750
	4-1/2 in fibercast	--	3978	---	---

B. Corrosion Protection: #2 Diesel fuel in annulus of the well between tubing string and long casing string. Average annulus pressure: 135 psi

C. Spill prevention and containment plan to be employed during the operation of the disposal well:

1. The well head is contained in a sump. Any spillage outside the sump will be collected in the Vulcan wastewater systems and returned to one of the other disposal wells on the plant site.

II. INJECTION LIMITATIONS AND MONITORING REQUIREMENTS

A. The permittee is authorized to inject stormwater runoff, recovered groundwater and process wastewater originating from manufacturing activities as specified in the application for this permit. Such injection in the disposal well shall be controlled, limited and monitored by the permittee as specified below. All reports are to be submitted to the department not later than fourteen days after the last day of the month in which such reports are due.

B. Only gravity pressure at the well head is to be used for injection.

C. Monitoring Requirements:

1. Daily Monitoring Requirements - Report Monthly

   a. Volume of flow - GPD (date and time recorded)*
   b. Rate of flow - GPM*
   c. Annulus pressure reading*
   d. Wellhead vacuum reading*
   e. Person in charge of making readings

   *These parameters shall be continuously monitored and records of such maintained in addition to the weekly average, minimum and maximum values of each.

2. Weekly Monitoring Requirements - Report Monthly

   a. Temperature of injection fluids prior to injection.

3. Weekly Analysis of Fluids to be Injected - Report Monthly

   a. pH
   b. Total Organic Carbon
   c. Chloride
   d. Volatile Organics
   e. Hexachlorinated Compounds
   f. Chlorinated Phenol Compounds
   g. Antimony
   h. Chromium (III, VI)

4. Annual Report

   a. Static fluid level of the Arbuckle formation
   b. Mechanical integrity test (every two years)

5. Reporting Requirements

   a. Any well treatment procedures used, including those associated with normal maintenance and malfunction correction

   b. Notice of abandonment and report of plugging

   c. Immediate notification of the department, if annulus pressure reduction is 25% or more

   d. Immediate notification of the department of all spills associated with operation of the injection well

e. Immediate notification of the department of any well malfunction or failure

D. STANDARD CONDITIONS

In addition to the specified conditions aforementioned, the permittee shall comply with the standard conditions which follow (Standard Conditions for Underground Injection Control Permits).

E. DEPARTMENTAL REVIEW

The department shall review the permit specifications and monitoring analyses to insure compliance of the permit conditions and to determine if the frequency and type of analyses is appropriate for characterization of the injected fluids. Modifications in the monitoring requirements may be made as deemed necessary by the department.

F. PLUGGING AND ABANDONMENT

The permittee shall conform to all plugging and abandonment requirements of the department in order that the movement of fluids either into an underground source of drinking water or from one underground source of drinking water to another shall not be allowed. The abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application have been approved by the department and any modifications to the abandonment and plugging procedures as outlined in Vulcan's December 19, 1984 application are subject to departmental approval.

G. SITE INSPECTIONS

The department shall make unannounced site inspections for the purpose of obtaining split samples and observing disposal well operations. The permittee waives objection to such inspections.

H. EVIDENCE OF FINANCIAL RESPONSIBILITY

Vulcan Chemicals has established the necessary financial assurance for the future plugging and abandonment of the disposal well by virtue of the information submitted to the KDHE. Vulcan Chemicals has satisified the plugging and abandonment financial requirements as outlined in 40 CFR Part 144 Subpart F.

Vulcan Chemicals has used the financial test and corporate guarantee method. The requirements of this method are met as follows:

1) The ratio of total liabilities to net worth is less than 2.0.
2) The ratio of the sum of net income plus depreciation, depletion, and amoritization of total liabilities is greater than 0.1.

3) The ratio of current assets to current liabilities is greater than 1.5.
4) The net working capital and tangible net worth are each at least six times the sum of the current plugging and abandonment cost estimate.
5) The tangible net worth exceeds $10 million.
6) The assets in the United States are at least six times the sum of current plugging and abandonment cost estimate.

I. ANNULUS PRESSURE REDUCTION

When an annulus pressure reduction of 25% or more occurs, the well is to be taken out of service immediately and the department notified. Any necessary remedial action is to be taken and the well pressure tested prior to being brought back into service. The pressure test is to be witnessed by the department.

J. MECHANICAL INTEGRITY TEST

Once every two years, Vulcan is to conduct a mechanical integrity test as follows:

1) Pull tubing string and visually inspect.
2) Set retrievable bridge plug or packer immediately above the injection zone and pressure test the casing at 200 psi for one hour. This test is to be witnessed by the department and is to be strictly a hydraulic fluid pressure test.
3) Replace tubing, load annulus, and conduct a pressure test as specified by the department. This test is to be witnessed by the department.
4) Run temperature log.

K. CHEMICAL ANALYSIS

The permittee shall submit to the department within three months of permit approval an analysis of the 129 priority pollutants (EPA Method 624 and 625), silver, arsenic, barium, cadmium, chromium, copper, lead, selenium, zinc, mercury, and any other analytical parameters needed to complete Attachment II. Modifications may be made to Attachment II based on a review of the data obtained.

L. PERMIT MODIFICATION

The injection limitations and monitoring requirements as specified in the permit are subject to departmental review and modification if deemed necessary.

ATTACHMENT II

WASTE ANALYSIS PLAN

C-2 Waste Analysis Plan [40 CFR 270.14(b)(3)]

A. Parameters and Rationale

	Hazardous Waste	Parameter	Rationale
1.	Hex Waste	Hexachlorobutadiene (HCBD) Hexachlorobenzene (HCB) Hexachloroethane (HCE) PCB's Perchloroethylene Carbon Tetrachloride	Hex waste is a RCRA listed hazardous waste (K016) due to its toxicity. Also regulated under TSCA.
2.	Pentachlorophenol Waste	Pentachlorophenol Tetrachlorophenol	Pentachlorophenol waste is a RCRA listed hazardous waste (U242) due to its toxicity.
3.	Process Waste Water	pH	The wastewater is a RCRA hazardous waste due to its corrosivity (D002) with a plant pH balance of 1.
4.	Interceptor Well Water	Carbon Tetrachloride Perchloroethylene Hexachlorobutadiene (HCBD) Hexachlorobenzene (HCB) Hexachloroethane (HCE)	The interceptor well water is defined by EPA as leachate from a listed hazardous waste. Additional analysis is conducted on this waste stream as specified in Vulcan's groundwater management program.
5.	Misc. Organic Waste	Carbon tetrachloride Methylene chloride Chloroform Perchloroethylene Methyl chloride 1,1,1 Trichloroethane Trichloroethylene	All compounds are U listed materials due to their toxicity.

B. Test Methods

All test methods are from test methods for evaluating process water, physical/chemical methods (EPA office of water and waste management, SW-846, 1980), or other EPA approved methods.

Parameter	Test Method	Reference
pH	Electrometric	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U.S. EPA SW-846.
EP Toxicity	EP Toxicity Test	40 CFR 261, Appendix II

Parameter	Test Method	Reference
Carbon Tetrachloride	GC/FID	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Perchloroethylene	GC/FID	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Hexachlorobutadiene (HCBD)	GC/FID	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Hexachlorobenzene (HCB)	GC/FID	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Hexachloroethane (HCE)	GC/FID	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Pentachlorophenol	Infrared Analyzer	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Tetrachlorophenol	GC/TCD	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Methylene Chloride	GC/FID	Test Method for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Chloroform	GC/FID	Test Method for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Methyl Chloride	GC/FID	Test Method for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.

Parameter	Test Method	Reference
1,1,1-Trichloroethane	GC/FID	Test Method for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
Trichloroethylene	GC/FID	Test Method for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.
PCB's	GC/MS	Test Method for Evaluating Solid Waste. Physical/Chemical Methods U. S. EPA SW-846.

C. Sampling Methods

1. Hex Waste

Hazardous Waste:	Hexachlorobutadiene (HCBD) Hexachlorobenzene (HCB) Hexachloroethane (HCE) PCB's Perchloroethylene Carbon Tetrachloride
Sampling Method:	Sampling a liquid hex transfer in a batch operation.
Description of Sampling:	Grab sample taken of hex transfer from nozzle located on the pump discharge for the waste recirculation line in the waste feed system.
Reference for Sampler:	Sample taken in glass bottle.

2. Pentachlorophenol Waste

Hazardous Waste:	Pentachlorophenol Tetrachlorophenol
Sampling Method:	Sample from process sample point.
Description of Sampling:	Batch operation, sample composited throughout batch.
Reference for Sampler:	Sample taken in Stainless Steel Bucket.

3. Process Wastewater

Hazardous Waste:	pH
Sampling Method:	Sampling a deep well injection feed basin.
Description of Sampling:	Composite sample using a Coliwasa sampler from three grab samples at top, middle and bottom of disposal basin.
Reference for Sampler:	Test methods for the Evaluation of Solid Waste, Physical/Chemical Methods EPA-SW-846.

4. Interceptor Well Water

Hazardous Waste:	Carbon Tetrachloride Perchloroethylene Hexachlorobutadiene (HCBD) Hexchlorobenzene (HCB) Hexachloroethane (HCE)
Sampling Method:	Taking liquid well water samples directly from the discharge of the water well pump.

Description of Sampling: A liquid grab sample taken at the discharge of the well pump.

Reference for Sampler: Sample taken directly from sample point on wastewater line.

5. Misc. Organic Waste

Hazardous Waste:
Carbon Tetrachloride
Chloroform
Methylene Chloride
Perchloroethylene
Methyl Chloride
1,1,1-Trichloroethane
Trichloroethylene

Sample Method: Sampling of Waste Drum

Description of Sampling: Composite sample using a Coliwasa samples from three grab samples at top, middle, and bottom of disposal basin.

Reference for Sampler: Test methods for the Evaluation of Solid Waste, Physical/Chemical Methods EPA-SW-846.

D. Frequency of Analyses

	Hazardous Waste	Analysis	Frequency
1.	Hex Waste	Hexachlorobutadiene (HCBD) Hexachlorobenzene (HCB) Hexachloroethane (HCE) Perchloroethylene Carbon Tetrachloride PCB's	Annually
2.	Pentachlorophenol Waste	Pentachlorophenol Tetrachlorophenol	Annually
3.	Process Wastewater	pH	Weekly
4.	Interceptor Well Water	Carbon Tetrachloride Perchloroethylene Hexachlorobutadiene (HCBD) Hexachlorobenzene (HCB) Hexachloroethane (HCE)	Semiannual
5.	Misc. Organic Waste	Carbon Tetrachloride Methylene Chloride Chloroform Perchloroethylene Methyl Chloride 1,1,1-Trichloroethane Trichloroethylene	As generated

The hex waste and pentachlorophenol waste are analyzed annually. The interceptor well water waste is analyzed semiannually. Because these wastes do not change significantly, this frequency of analysis suffices. Vulcan's operations keep these wastes very consistent in composition. Additional analyses will be performed, if process changes affect the hazardous characteristics of a waste.

E. Additional Requirements for Waste Generated Offsite

Vulcan handles only on-site generated wastes. Requirements for wastes received from off-site generators do not apply.

ATTACHMENT III

INSPECTION PLAN

entrance gate located on the west side of the facility is supervised by one guard 24 hours per day, seven days per week.

All contractors and visitors are required to sign in and out on a log sheet when they enter and leave the plant. Except for Monday through Friday, 8:00 a.m. until 6:00 p.m., all nonoperating employees are required to sign in and out on a log sheet at the main gate.

Warning signs have been placed at the container storage area, hex incinerator, and disposal wells. At the container storage area and disposal wells, signs are located on all four sides. Figure D-2 in Section D identifies the sign locations around the container storage area, and Appendix L-9 identifies the sign locations around the disposal wells. The hex incinerator has four warning signs located at key access points (Reference Appendix L-5).

F-2 - Inspection Schedule

Pursuant to the authority of 40 CFR 264.15 Vulcan is required to monitor its hazardous waste facilities. This section discusses how Vulcan complies with these requirements.

A. General Inspection Requirements

The container storage area is inspected weekly by Utilities and Pollution Control operators (refer to Appendix F-1). The hex incinerator is inspected every four hours to ensure proper operating conditions in addition to a daily equipment inspection. Some conditions are monitored continuously (Refer to Appendix F-8.) The disposal wells are monitored and inspected every two hours in addition to a weekly detailed inspection. (Refer to Appendix L-8, Part 3, Section A).

1. Types of Problems

General problems, which operators are trained to look for during inspection, are abnormal operating conditions, leaks, eroded dikes or curbing, and malfunctions (refer to Appendix F-1, F-2, F-3 and Appendix L-8, Part 3, Section A).

2. Frequency of Inspection

Inspection of the container storage area is weekly. The incinerator operation is monitored continuously, however, physical condition is inspected every four hours. Inspection of the disposal wells is every two hours.

B. Special Process Inspection Requirements

1. Container Storage Area

Inspections of the container storage area are done according to Utilities Operating Special Instruction 17B (Appendix F-2) and the

Container Storage Area Weekly Inspection Checksheet (Appendix F-1).

- These items are addressed during the inspection:

  Check drum condition for leaks, proper labelling, lids
  Assure drums are located on pallets
  Assure HW drums are separated from other drums
  Inspect paving and curbing conditions
  Inspect conditions of fence
  Check conditions of signs around storage area
  Check for evidence of spillage outside contained area

If something is wrong, it is noted on the check sheet. If a spill has occurred, or a leaking drum is observed, remedial action is taken immediately. The spillage would be collected in new drums, labeled, and placed in the storage area. A leaking drum would either be placed in an oversize drum, or its contents would be placed in a new drum. The leaking drum would be triple rinsed and crushed for sanitary landfill disposal.

If a fence, sign, or curb was found unsatisfactory, a service order would be prepared. This requires scheduling of maintenance personnel, which can vary between the same day response to one month, dependent on the works priority.

Inspection records on the container storage area are kept on file for a minimum of three years.

2. Hex Incinerator

The incinerator is continuously monitored in addition to automatic shutoff on critical operating parameters. The operating and control parameters for the hex incinerator are identified in Appendix F-8. All operating conditions are logged every four hours during a walk-through inspection. If abnormal operating conditions or equipment leaks are observed, the condition is immediately corrected. In the event the action did not correct the problem, the incinerator would be shut down for necessary maintenance. The hex feed system has a minimum storage capacity of 28 hours. If repairs cannot be made in a timely manner, the Perchloroethylene Plant would also be taken out of service. This eliminates the generation of hex waste, until incinerator repairs are made.

A detailed daily inspection for equipment leaks, nozzle condition, and gun assembly is also conducted. If abnormal conditions or leaks are observed, the information is logged along with the corrective action taken. The date, time, and signature of the operator is identified on the log. (Refer to Appendix F-9, "Preventive Maintenance and Inspection Program".)

A preventive maintenance program on the incinerator is also in place. This program includes routine calibration of instrumentation and maintenance checks on incinerator equipment. The frequency of

calibration and maintenance checks varies with each piece of equipment. During each equipment check the date, time, signature, and corrective action is documented. (Refer to Appendix F-9, "Preventive Maintenance and Inspection Program".)

All operating and inspection records are kept on file for a minimum of three years.

3. Disposal Wells

Inspections of the disposal wells are conducted every two hours, and all operating conditions are checked and recorded. If unusual conditions are observed, the well is immediately shutdown (i.e. drop in annulus oil pressure by 25% or leaks). Adequate storage and additional disposal capacity is available if special conditions require a well shutdown. Condition of monitoring equipment and process equipment related to the disposal well operations are also checked during the inspection. (Refer to Appendix F-6.) A detailed weekly inspection on monitoring equipment is also conducted. If problems in monitoring equipment are observed, corrective action is taken immediately. (Refer to Appendix F-7, Weekly Disposal Well Check.) All inspection records have the date, time, and signature of the operator who conducted the inspection. All inspection and operating records are kept on file until closure of the facility is completed.

F-3 - Preparedness and Prevention Requirements 40 CFR 264, Subpart C

The following information describes the required procedures, equipment, maintenance of the equipment, availability of the communications systems, accessibility of the facilities, and involvement of local authorities to prevent a release of hazardous constituents into the environment.

A. Facility Operations (40 CFR 264.31)

The container storage area, the disposal wells, and the hex incinerator, all have been designed, operated, and maintained to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release into the environment.

B. Required Equipment (40 CFR 264.32)

To minimize the impact of an incident, certain equipment must be available, which includes internal and external communication systems, fire control equipment, spill control equipment, decontamination equipment, and water systems. The following is a general description of the equipment available for emergency response. More details on required equipment are discussed in the Contingency Plan.

1. Internal Communications

The internal communication system for Vulcan's RCRA facilities is the plant telephone system. An alarm can be activated by any in-

plant telephone. Appendix G-2 describes the procedures used to sound the alarm. Locations of the telephones are identified on Appendix G-4.

2. External Communication

External communication system or telephone system is controlled through the command post. Vulcan can request the services of any local response teams or local authorities with this system. The command post location is identified on Appendix G-4.

3. Portable Fire Extinguishers, Spill Control Equipment, and Decontamination Equipment

Portable fire extinguishers, spill control equipment, and decontamination equipment are available for use at all hazardous waste facilities. The locations of this equipment are identified in Appendix G-4, Section G. Contingency Plan discusses the individual equipment available.

4. Water Systems

The water system is maintained with adequate volume and pressure for response to incidents at the hazardous waste facilities.

C. Testing and Maintenance of Equipment (40 CFR 264.33)

Vulcan inspects and maintains all equipment that is needed to minimize the impact of an incident at the hazardous waste facilities. Equipment preventive maintenance procedures are outlined in Section G 264.52 of the Contingency Plan.

D. Access to Communication or Alarm System (40 CFR 264.34)

The alarm system, which is activated by telephone is accessible by all personnel. Telephones are located in the general area of all hazardous waste facilities. (Refer Appendix G-4 for exact location.)

E. Required Aisle Space (40 CFR 264.35)

Proper aisle spacing or access routes are maintained for all facilities to provide for immediate response to any accident. Aisle spacing is discussed in Section F-4(F).

F. Arrangement with Local Authorities (40 CFR 264.37)

Vulcan has provided the local authorities with copies of the RCRA Contingency Plan and they have been briefed as to their possible involvement. In addition, local hospitals have received hazard information on the waste handled at the facilities. This information will allow the local authorities to respond to emergencies at the Vulcan RCRA facilities in an effective manner. If more than one agency responds, the primary agency is the Sedgwick County Fire Department.

In the event of an emergency, local and state response personnel would be notified immediately; in particular, the County Health Department and the Kansas Department of Health and Enviornment, Wichita Office. It must also be noted that if any agency refuses to respond to an emergency, Vulcan will document the refusal in the operating record.

F-4 - Preventive Procedures, Structure, and Equipment

A. Loading/Unloading

Drums which are stored in the container storage area are filled in process areas, which are contained by dikes, trenches, and sumps. Details of the process wastewater system and containment are discussed in Section B of the application. Drums are then transported by forklift from the point of generation to the container storage area. Any accident during transportation would be cleaned up immediately. Spillage and contaminated soil would be redrummed. Remedial action would be simple because the contents of the drum are solids. The same potential for a hazard exists in loading trucks for off-site disposal. Two people are present during loading operations.

Hex waste at the incinerator is all hard-piped; therefore, the potential for a spill during loading and unloading of waste does not exist. If a line or vessel in the feed system received abnormal back pressure, one of several emergency relief valves would operate. The operation of a relief valve eliminates the potential for an explosion, but it could generate a spill of hex waste, which would be contained within a diked process area. Any equipment that would come in contact with released hex waste would be decontaminated with a solvent. The spilled waste and spent solvent would be incinerated (refer to Section D-2 for additional information).

All wastewater is hard piped to the disposal wells, therefore the potential for a spill during loading and unloading does not exist. Wastewater is gravity fed to the disposal wells. If blockage occurs at or near the disposal well, no back pressure is created. Flow to the well stops. This type of malfunction would be detected by inspections conducted every two hours.

B. Runoff

Any runoff generated at the hazardous waste facilities is contained in the process wastewater system. Both areas are diked and drain to sumps. The sump will handle a 10-year, one-hour rainfall. Furthermore, the entire plant stormwater system can contain runoff from two, 10-year, 24-hour storms occurring on consecutive days. As described in Section B, no process or nonprocess runoff leaves the plant site. Weekly inspections of the container storage area and daily inspections of the incinerator would identify any potential runoff from leaks or spills.

C. Water Supplies

All process areas throughout the plant are contained by concrete surfacing, dikes, sumps, and basins, which include the hazardous waste

facilities. The process wastewater handling system, eliminates the potential of groundwater contamination from the RCRA hazardous waste facilities (refer to Section B for detailed description of wastewater system).

D. Equipment and Power Failures

In case of a power failure emergency, all hazardous waste facilities would become inactive. Emergency backup lighting will automatically be activated throughout the plant. Portable power generating units are available, where needed. All plant operation will be shutdown.

If a loss of auxiliary fuel occurs, the hex incinerator feed line will automatically close.

E. Personal Protective Equipment

All operators who handle RCRA waste are familiar with the hazards of the waste and protective equipment to be used during handling. The equipment items required for handling waste are:

1. Rubber gloves
2. Rubber boots
3. Cover goggles

Safety showers and eye wash units (refer to Appendix G-2 and G-4) are located throughout the plant.

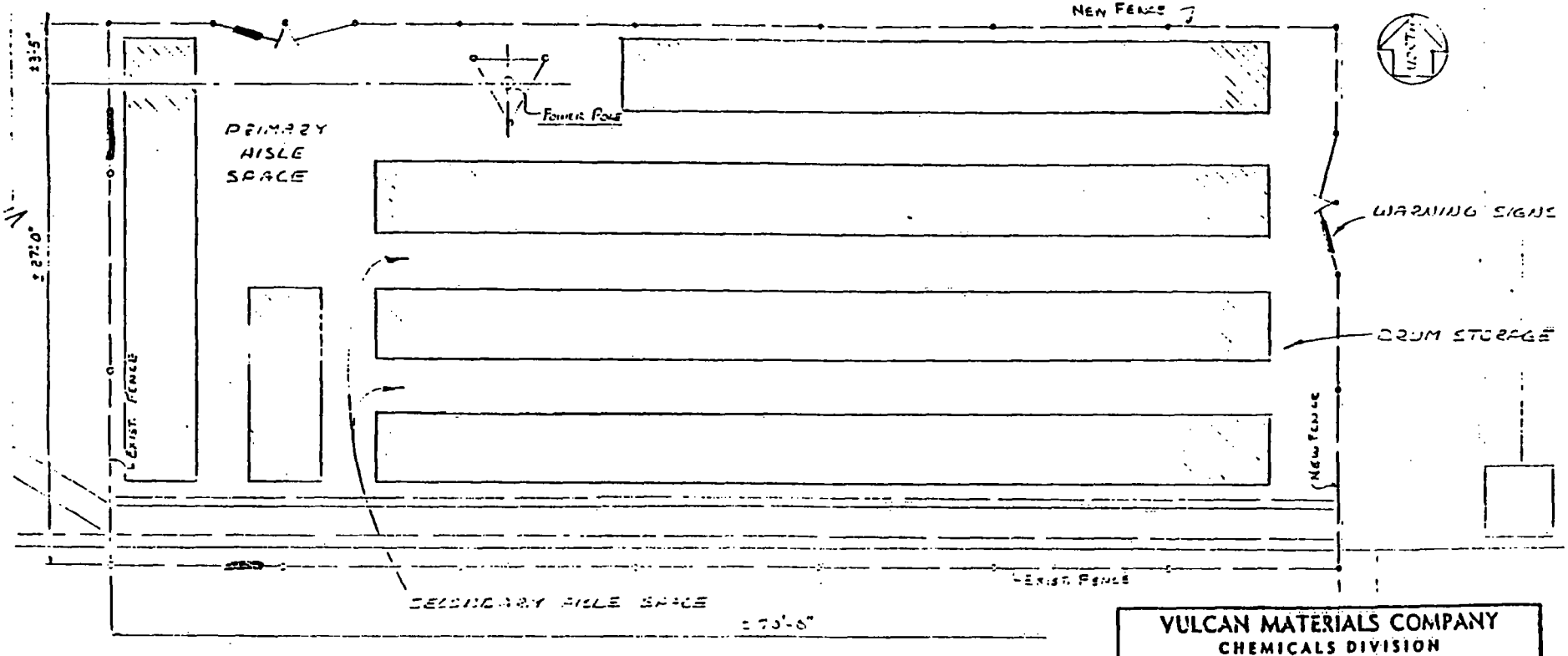
Addition information on equipment is covered in the contingency plan, Section G.

F. Aisle Space

Both aisle space and access roads are maintained continuously to allow proper and immediate access to the facilities. Section D-1 describes in further detail the container storage area aisle spacing. The hex incinerator is located along an in-plant roadway. All disposal wells are located in open areas or along in-plant roadways, so access can be maintained.

F-5 - Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste

No reactive, ignitable, or incompatible wastes are treated, stored, or disposed of at Vulcan (refer to Waste Characterization Section).



VULCAN MATERIALS COMPANY
CHEMICALS DIVISION
WICHITA, KANSAS

FIGURE D-2

DRUM STORAGE AREA PLOT PLAN

SCALE 1" = 10'	DRAWN	CHK.
DATE 4-1-85	CAD.	APP.
	DRAWING NO.	

APPENDIX F-9

INSPECTION SCHEDULE AND PREVENTIVE MAINTENANCE PROGRAM

Under the authority of 40 CFR 264.15, Vulcan is required to monitor its hazardous waste facilities. This section discusses how Vulcan complies with these requirements.

A. Inspection Program

1. General

The incinerator is continuously monitored in addition to automatic shutoff on critical operating parameters. The operating and control parameters for the Hex Incinerator are identified in Section IV. All operating conditions are logged every four hours during a walk-through inspection. If abnormal operating conditions or equipment leaks are observed, the condition is immediately corrected. In the event the action did not correct the problem, the incinerator would be shut down for necessary maintenance. The hex feed system has a minimum storage capacity of 28 hours. If repairs are not made in a timely manner, the Perchloroethylene Plant would also be taken out of service. This eliminates the generation of hex waste until repairs are made.

A detailed and comprehensive inspection program is in place for the Hex Incinerator. The purpose of the program is to identify equipment leaks or abnormal operating conditions, and then implement corrective action to remedy the problem. The program consists of routine inspections performed on a daily basis with the assistance of a detailed inspection checklist. Any leaks or equipment problems identified in the inspection are logged on the checklist along with any corrective actions taken to remedy the problems. The date and time of the inspection, and the inspectors name are identified on the checklist. A copy of the daily checklist is included as Figure A.

2. Types of Problems

The routine inspection program is designed to identify the following types of problems:

a. Leaks in the equipment associated with the incinerator.

b. Improper assembly of the waste feed gun, and excessive wear in the waste feed atomizing nozzle.

c. Improper functioning of the automatic waste feed and incinerator shutdown systems.

d. Improper calibration of key monitoring equipment associated with the incinerator.

The inspection program ensures that any of the above problems are identified and properly corrected.

3. Implementation Procedures

The routine daily incinerator inspection consists of a detailed visual inspection of the incinerator and major associated equipment. The specific equipment included in the inspection are as follows:

a. Hex Feed Circulation Pumps and Hex Feed Piping
b. Hex Feed Gun and Atomizing Nozzle
c. Exterior of Combustion Chamber and Plenum
d. Transition Piping Between Boiler and Stack Gas Scrubber
e. Stack Gas Scrubber
f. Acid Circulation Pumps and Acid Piping
g. Caustic Circulation Pumps and Caustic Piping

The inspection is performed by trained Perchloroethylene Plant operators. The items listed above are inspected while burning waste material, except for the hex gun and atomizing nozzle. The hex gun and atomizing nozzle are inspected by the operator for proper gun assembly and excessive wear on the atomizing nozzle with the waste feed shutoff. The atomizing nozzle is inspected using a specially designed "go-no go" jig which is inserted over the nozzle. In the event that waste material is not being burned, the daily inspection is performed while burning natural gas, and a notation is placed on the checklist so indicating.

4. Corrective Action

The routine incinerator inspection program ensures that any problems are quickly identified and corrected. When needed, the operator performing the

inspection takes immediate action to correct the problem. If immediate corrective action is not necessary, the proper maintenance personnel will be assigned to correct the problem. If conditions warrant, the incinerator will be shut down until the problem can be corrected.

Any corrective action taken to alleviate a problem identified in the inspection is logged on the daily checklist.

5. Recordkeeping

The daily checklist is filled out completely, dated, and signed upon completion of the inspection. The checklist is then given to the Perchloroethylene Production Supervisor for review and filing. A copy of each checklist will be maintained on-site until closure of the facility.

B. Preventive Maintenance Program

1. General

A detailed and comprehensive preventive maintenance program is in place for the Hex Incinerator. The purpose of the program is to provide for routine calibration of instrumentation, testing of the waste feed and incinerator shutdown systems, and maintenance checks on incinerator equipment. The frequency and type of preventive maintenance varies with each piece of equipment. A series of log sheets are utilized to record the date, time, signature, type of maintenance, and corrective action performed on the incinerator equipment. Copies of the preventive maintenance log sheets are included as Figures B, C, and D.

2. Types of Problems

The preventive maintenance program is designed to identify and prevent equipment problems that could result in failure if not corrected. The problems the preventive maintenance program identifies are indicated on the log sheets included as Figures B, C, and D. The overall types of problems identified in the preventive maintenance program include the following:

a. Improper functioning of the automatic waste feed and incinerator shutdown systems.

b. Improper calibration of key monitoring equipment associated with the incinerator.

c. Unusual deterioration of firebrick interior of combustion chamber or plenum.

d. Excessive wear on equipment directly contacting waste material or stack gas; for instance, orifice plates or control valve seats.

e. Excessive wear on piping which could lead to failure and leakage.

f. Vibration problems on rotating equipment which could lead to failure.

The preventive maintenance program ensures that any of the above problems are identified and corrected to prevent failure of the equipment.

3. Implementation Procedures

The routine preventive maintenance program involves the periodic inspection, maintenance, system testing, and calibration of key equipment associated with the incinerator. The equipment covered by the program, the specific maintenance to be performed, and the frequency of the maintenance are all indicated in the maintenance log sheets included as Figures B, C, and D. The log sheet included in Figure B covers the automatic waste feed and incinerator shutdown system checks, and calibration of waste feed rate and scrubber fluid pH monitoring equipment. The log sheet included as Figure C covers the calibration of the continuous oxygen and carbon monoxide stack gas concentration monitors. All of the preventive maintenance indicated in Figures B and C are performed on a weekly basis. The log sheet included as Figure D cover preventive maintenance items which are performed on a less frequent basis.

The shutdown system checks are performed while burning natural gas, and not while burning waste material. The waste feed rate shutdown checks are performed by tripping the devices and watching the automatic waste feed shutoff valve to ensure that it closes. The manual waste feed shutoff valve is closed during this operation to ensure that waste material does not enter the incinerator during the

shutdown checks. The incinerator shutdown checks are performed by tripping the devices and allowing the unit to shut down.

If any of the automatic shutdown systems are activated while burning waste material, the fact that the system worked is logged onto the weekly checklist. In this event, the real time shutdown is utilized in lieu of a system test for that week.

The implementation of the preventive maintenance program is the responsibility of the Perchloroethylene Plant Production Supervisor. The actual maintenance is performed by maintenance personnel skilled in the specific area being worked on. The Perchloroethylene Plant Production Supervisor schedules the maintenance following the frequency listed in Figures B, C, and D. As the maintenance is performed, the Perc Plant Production Supervisor completes the applicable log sheet, and ensures that the next required maintenance is scheduled.

4. Corrective Action

The routine incinerator preventive maintenance program is designed to prevent equipment problems before actual failure occurs. When a problem is identified during the maintenance, immediate steps are taken to correct it. Any corrective action taken during the preventive maintenance inspection is included in the log sheet.

5. Recordkeeping

The log sheets utilized as part of the preventive maintenance program are filled out completely, dated, and signed by the Perchloroethylene Plant Production Supervisor as maintenance work is completed. A copy of all of the log sheets is maintained on-site until closure of the facility.

APPENDIX F

F-1

DRUM STORAGE AREA
WEEKLY INSPECTION CHECKSHEET

	Satisfactory Yes	Satisfactory No	Comments
Drum's Condition	___	___	_____
Proper Drum Stencils	___	___	_____
Secure Lids	___	___	_____
Proper Aisle Spce	___	___	_____
Paving and Curbing Condition	___	___	_____
Fence Intact and Gate Locked	___	___	_____
Condition of Hazardous Waste Signs	___	___	_____
Evidence of Spillage Outside Containment Area	___	___	_____

Number of Penta Waste Drums: _____ drums

Action Taken: _____

_____

_____

_____

Instructions:

1. Weekly inspection is required.
2. Copy to Gary Mason
3. Copy to Bob Beehler

Operator _____

Time _____

Date _____

Form #3-08-09

Vulcan Materials Company

APPENDIX F-2

TO: UPC Operators

FROM: D. K. Noller

June 9, 1983

SUBJECT: Special Instruction 17B: Inspection of Drum Storage Area

The Resource Conservation and Recovery Act (RCRA) requires that hazardous waste storage facilities be inspected regularly and that the inspection criteria be written and included with operating procedures. Thus, we have the reason for this special instruction.

Inspection of the drum storage area must be done weekly, and documented on the inspection log sheet, which is sent to the Environmental Co-ordinator. These items must be inspected:

1. Are drums in good condition, not leaking and sealed with a lid?
2. Are drums, which will be sent to landfill, separated from those which are temporarily stored?
3. Are the paving and curbing intact?
4. Is the sealant between paved areas intact?
5. Are the fence and gate in good repair?
6. Are the signs around the storage area in good repair?
7. Are there indications of spillage outside the controlled drainage area?

If the answers to (1) through (6) are "Yes" and (7) is "No", then the drum storage area is satisfactory:" Mark "OK" on the log sheet. If there are discrepancies note the number on the log sheet, then notify the supervisor and write needed service orders.

Personal Protective Equipment

No special personal protection equipment is needed to enter the drum storage area. Nevertheless, gloves, rubber boots, and cover goggles are required when re-drumming waste or cleaning up spills.

D. K. Noller

DKN:ls

APPENDIX F-3
QUALIFICATION CHECKLIST FOR OPERATING HEX OXIDIZER

Instructions:

Documented training for operators of waste incinerators is required under the Resource Conservation and Recovery Act (RCRA). The checklist, which is attached, will be our way to insure that all hex oxidizer operators receive the same basic training. The skills and knowledge specified on the checklist represent the minimum requirements to operate the hex oxidizer. This checklist will be validated by either the operator's shift foreman or his production foreman. The checklist will then become part of the individual's permanent training record.

QUALIFICATION CHECKLIST
FOR OPERATING HEX OXIDIZER

Name: _____

Reviewer Initial

I. Demonstrate ability to indentify all equipment associated with hex oxidizer.

_____ A. Hex Oxidizer System
_____ B. Waste Heat Boiler System
_____ C. Flue Gas Scrubber System
_____ D. Waste Fuel Feed System

II. Demonstrate ability to inspect equipment and maintain operating logs.

_____ A. Check equipment for leaks
_____ B. Visual inspection of stack emissions
_____ C. Check operating conditions
_____ D. Properly log essential operating conditions
_____ E. Properly log incinerator shutdowns

III. Demonstrate knowledge of operating parameters for the hex oxidizer and associated equipment.

_____ A. Oxidizer temperature (2050°F - 2200°F)
_____ B. Boiler outlet temperature (450°F - 550°F)
_____ C. Scrubber temperature (less than 180°F)
_____ D. Hold tank temperature (300°F - 350°F)
_____ E. Dowtherm temperature (350°F - 450°F)
_____ F. Hex waste circ loop temperature (300°F - 400°F)
_____ G. Boiler steam pressure (250 psig)
_____ H. Boiler level (50%)
_____ I. Excess oxygen (3% - 14%)
_____ J. Hex feed rate (less than .6 gpm)
_____ K. Vent scrubber pH (greater than 5)
_____ L. Caustic scrubber circulation rate (greater than 7 gpm)

IV. Demonstrate knowledge of alarm and shutdown systems.

_____ A. High oxidizer temperature, shutdown (2300°F)
_____ B. Low oxidizer temperature, waste shutoff (2012°F) and alarm (2100°F)
_____ C. High boiler outlet temperature, shutdown (600°F)
_____ D. Low boiler level, alarm and shutdown (4" below NWL)
_____ E. Flame failure, shutdown
_____ F. Low gas pressure, shutdown (12 psig)
_____ G. High gas pressure, shutdown (52 psig)
_____ H. Low combustion air pressure, shutdown (5" WC)
_____ I. High boiler steam pressure, alarm (260 psig)

J. High boiler level, alarm (4" above NWL)
K. Low absorber water flow, alarm
L. High hex fee, waste shutoff (.6 gpm greater than 2 minutes)
M. Low excess oxygen, waste shutoff (less than 3%)
N. High excess oxygen, waste shutoff (greater than 14%)
O. High CO, waste shutoff (greater than 80 ppm for 2 minutes)
P. High, high CO, waste shutoff (greater 120 ppm)

V. Demonstrate Cold Start-up Procedure.

A. Verify level in boiler and check system for leaks
B. Check:
   1. Pilot light gas valve closed
   2. Main burner gas valve closed
   3. Water and caustic circulation on T-101 established
C. Start blower
D. Press purge button (allow approximately 10 seconds for purge complete light)
E. Open pilot light block valve
F. Press ignition button (allow approximately 10 seconds for "Flame Failure" warning light to go out)
G. Check main burner FCV and insure it is on minimum stop setting
H. Reset main gas valve
I. Open main gas valve
J. Allow 30-60 minutes on minimum stop for warming
K. Increase gas to burner thereafter in approximately 200°F increments until reaching 2100°F (operating range)

VI. Demonstrate Hot Start-up Procedure.

A. Follow all items for cold start-up A thru I
B. Increase gas flow to desired operating temperature (2100°F)
C. Allow for warming to operating temperature before burning hex

VII. Demonstrate Normal Shutdown Procedures.

A. In burning hex:
   1. Block hex at ram seal valve on circulation line
   2. Flush hex out of line to gun
   3. Flush both sides of F.T. to gun
   4. Press waste stop button on control panel
B. Lower main gas valve to minimum stop setting
C. Block main gas valve to burner
D. Block pilot light gas valve

_____ E. Shutdown blower

VIII. Demonstrate Waste Burning Procedure.

_____ A. Insure oxidizer is at operating temperature (2050°F - 2200°F)
_____ B. Check ram seal (hex) valve is CLOSED
_____ C. Check flush valve (close if open)
_____ D. Close hex feed valve to gun
_____ E. Press waste start button (which opens shutdown valve to gun and atomizing steam control valve)
_____ F. Open ram seal valve to charge feed line with hex
_____ G. Open hex feed control valve and set atomizing steam
_____ H. Reduce main gas valve to maintain operating temperature

IX. Emergency Response

_____ A. Demonstrate familiarity with emergency signal system
_____ B. Demonstrate knowledge of remedial measures for a hex spill

X. Safety

_____ A. Demonstrate knowledge of hazards associated with hex waste
_____ B. Demonstrate knowledge of protective equipment needed for handling hex waste
_____ C. Demonstrate knowledge of treatment for exposure to hex waste

Qualified Operator's Signature _____ Date _____

Reviewed by _____ Date _____

APPENDIX F-4 (1 of 3)

HEX OXIDIZER LOG SHEET

Operator 12-8 _____ 8-4 _____ 4-12 _____ Date _____

Time	Quench Steam	Atom. Steam Press.	Atom. Steam Flow	Gas Flow	Air Flow	Hex Waste Flow	Oxi-dizer Temp.	O_2	CO	Hold Tank Level	Hold Tank Temp.	Hex Return Temp.	Boiler Outlet Temp.	Boiler Treat Level	Visual Insp. of Stack
1 AM															12A
															1
															2
															3
5 AM															4
															5
															6
															7
9 AM															8
															9
															10
															11
1 PM															12P
															1
															2
															3
5 PM															4
															5
															6
															7
9 AM															8
															9
															10
															11

Operator 12-8 _____ 8-4 _____ 4-12 _____

Oxidizer Leak Inspection Time _____ _____ _____

Comments:

Form 3-45-19
Rev. 5-20-86

APPENDIX F-4 (2 of 3)
HEX OXIDIZER TOWER

Operator 12-8 _____ 8-4 _____ 4-12 _____ Date _____

Time	T-101H Bottom Circ.	T-101H Bottom Gas Temp.	Process H_2O to T-101H	T-101H NaOH Circ. Flow/Temp	#2 Point Flue Gas Scrubber Temp.	#1 Point T-101H Middle Temp.	Condensate to Top Section	Cell Liquor To D-103H	Scrubber pH
1 AM									
5 AM									
9 AM									
1 PM									
5 PM									
9 AM									

Time	CO_2 (lab)

Operator 12-8 _____ 8-4 _____ 4-12 _____

Oxidizer Leak Inspection Time _____ _____ _____

Comments:

Form 3-45-20
Rev. 5-20-86

APPENDIX F-4 (3 of 3)

INCINERATOR SHUTDOWN LOG SHEET

Date _____

Time	Reason	Action Taken	Time Restarted

APPENDIX F-5

SPECIAL INSTRUCTION #20, REVISION #2
INSTRUCTIONS FOR PACKAGING & LABELLING
HAZARDOUS WASTE TO OFF-SITE DISPOSAL

On July 1, 1981, new hazardous waste labelling requirements went into effect. The drum storage area is now fenced and controlled by UPC. Improperly labelled drums will not be stored there or shipped off-site. By following this procedure, we can avoid problems and delays in disposal.

1. Only those wastes listed in the table can be shipped off-site. Other wastes may be stored in the drum storage area with the permission of UPC; but, they must be kept separate.

2. All drummed waste must be in 55 gallon drums, which are in good condition with tight fitting lids.

3. Operating units that generate waste must stencil each drum with the name of the material, which we use, the proper D.O.T. name, the UN or NA identification number, the KDHE authorization number, the Texas I.D. Number and the department's account number. Consult with UPC supervision before attempting to send material, which does not appear in the table, to the drum storage area. It is the responsibility of the production unit that generates the waste to ensure that their drums are properly labelled. General maintenance will not remove improper drums, or drums which have been improperly labelled, from operating areas. Similarly, UPC will not admit such drums to the drum storage area.

4. UPC will arrange for shipment of waste to off-site facility.

5. Before the off-site transporter arrives, UPC will:

   a. Stencil the manifest number on each drum to be shipped.

   b. Apply D.O.T. labels, as specified on the manifest.

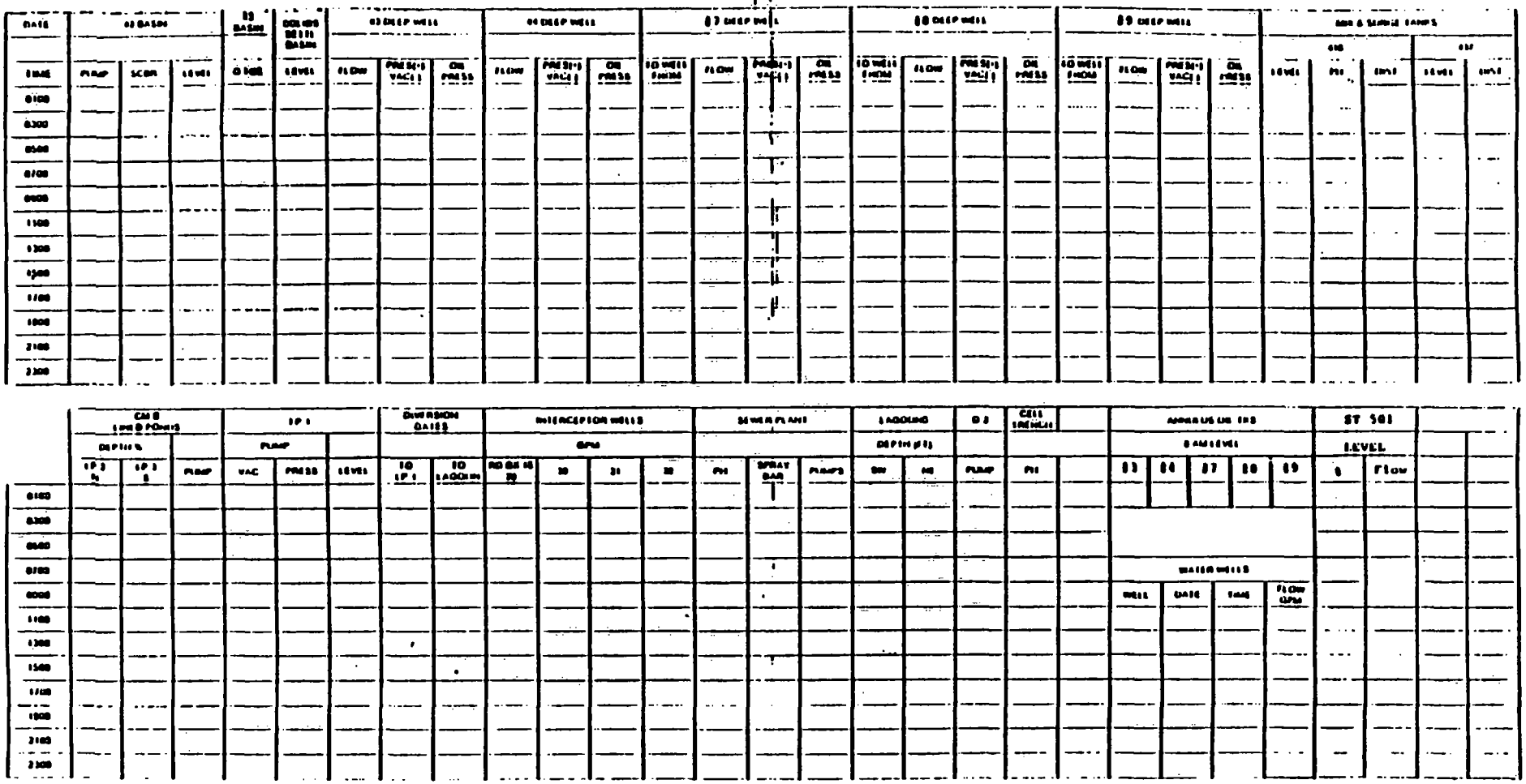
   c. Apply "Hazardous Waste" label, when needed.

   d. Complete the manifest and shipping papers.

6. UPC will supervise loading of the waste and offer placards to transporter.

7. For bulk materials (e.g. contaminated soil) contact UPC supervision.

APPEND -6
UTILITIES LOG SHEET
UTILITIES



APPENDIX F-7

WEEKLY DISPOSAL WELL CHECK

	Disposal Well No. 3			Disposal Well No. 4			Disposal Well No. 7			Disposal Well No. 8			Disposal Well No. 9		
	Yes	No	Comments/ Corrective Action	Yes	No	Comments/ Corrective Action	Yes	No	Comments/ Corrective Action	Yes	No	Comments/ Corrective Action	Yes	No	Comments/ Corrective Action
1. Is disposal well operating?															
2. Is annulus oil pressure gage working?															
3. Is well head pressure gage working?															
4. Is annulus oil pump working?															
5. Is well cellar dry?															
6. Is cellar in good condition?															
7. Are there any leaks at the well head?															
8. Are there any leaks at the annulus oil tank?															
9. Is the circular chart operating?															
10. Do the pens have ink?															
11. Is the flow meter operating?															
Operator's Signature															
Time															
Date															

Additional Comments:

Was a Service Order written? _____

GTM/4-21-86

APPEN F-8

OPERATING AND CONTROL PARAMETERS FOR WASTE INCINERATION

Operating Parameter	Operating Range	Corrective Action Limit	Corrective Action Shut Off	Frequency Of Monitoring	Frequency Of Calibration	Instrument
Stack Gas CO Conc.	0-120 ppm	> 120 ppm	6 Min Delay Automatic Waste Shut Off	Continuously	Once/Week	Beckman CO Analyzer
Stack Gas Oxygen Conc.	3-14%	< 3%	Automatic Waste Shut Off	Continuously	Once/Week	Beckman O_2 Analyzer
Combustion Temp. Zone	2012-2300 °F	<2012 >2300	Automatic Waste Shut Off Oxidizer Shut Off	Continuously	6 Times/Yr	Thermocouple/ Transducer
CO_2 Conc.	8-22%	< 99.9% Combustion Efficiency	Manual Waste Shut Off	Once/Week	Once/Week	Thermistor Detector GC
pH of Scrubber Circulation	7-13 pH	< 7 pH	Manual Waste Shut Off Within 10 Min	Continuously	Once/Week	UNILOC pH Analyzer
Caustic Circulation Rate	7-20 gpm	< 7 gpm	Manual Waste Shut Off Within 10 Min	Continuously	Once/Week	Orifice Plate
Water To Top Packed Section	3-10 gpm	< 2 gpm	Manual Waste Shut Off Within 10 Min	Once/4 Hours	4 Times/Yr	Orifice Plate
Combustion Air Flow Rate	200-875 scfm	> 875 scfm	Automatic Waste Shut Off	Continuously	4 Times/Yr	Annubar
Atomizing Steam Flow	150-450 lbs/hr	< 125 lbs/hr	Manual Waste Shut Off	Once/4 Hours	6 Times/Yr	Orifice Plate
Waste Feed Temperature	280-450 °F	< 260 °F	Manual Waste Shut Off	Once/4 Hours	Not Required	Thermocouple
Waste Feed Flow Rate	0-1 gpm	> 1 gpm	2 Min Delay Automatic Waste Shut Off	Continuously	Once/Week	Orifice Plate

FIGURE A

WASTE INCINERATOR DAILY CHECK DATE _____

	Yes	No	Comments/ Corrective Action	Time	Operator
1. Are there leaks on the plenum or chamber?					
2. Are there leaks on the transition piping?					
3. Are there leaks on the vent scrubber?					
4. Are there leaks at the acid circulation pumps?					
5. Are there leaks on the acid piping?					
6. Are there leaks at the caustic circulation pumps?					
7. Are there leaks on the caustic piping?					
8. Are there leaks at the hex circulation pumps?					
9. Are there leaks on the hex piping?					
10. Is the hex gun in good condition?					
11. Does the atomizing nozzle need to be replaced?					
12. Was hex burning during this inspection?					
13. Was a Service Order written?					

5-15-86
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FIGURE B

WASTE INCINERATOR WEEKLY CHECK

Week of _____ through _____

Inspected By	Incinerator Shutdowns	*Checked OK Yes	No	Time	Date
_____	1. High Oxidizer Temp Shutdown (2300 °F)	___	___	_____	_____
_____	2. High Boiler Outlet Temp Shutdown (600 °F)	___	___	_____	_____
_____	3. Low Boiler Level Shutdown (4" below NLL)	___	___	_____	_____
_____	4. Flame Failure Shutdown	___	___	_____	_____
_____	5. Low Natural Gas Pressure Shutdown (12 psig)	___	___	_____	_____
_____	6. High Natural Gas Pressure Shutdown (52 psig)	___	___	_____	_____
	Waste Feed Shutdowns				
_____	1. High Excess Oxygen (14%)	___	___	_____	_____
_____	2. Low Excess Oxygen (3%)	___	___	_____	_____
_____	3. High CO (120 ppm, 6 minute delay)	___	___	_____	_____
_____	4. High Hex Feed (1 gpm - 2 minute delay)	___	___	_____	_____
_____	5. Low Oxidizer Temp Waste Shutodd (2012 °F)	___	___	_____	_____
	Calibrations				
_____	1. Waste Feed (zero and range)	___	___	_____	_____
_____	2. pH Meter	___	___	_____	_____

*Give corrective action for any "No" response.

cc: Perchloroethylene Day Foreman
Central Files

5-15-86
Form No.:

FIGURE C

WASTE INCINERATOR ANALYZER CHECK - O_2 AND CO

Month _____ Year _____

O_2 ANALYZER				CO ANALYZER			
Initials	Date	Time	Comments	Initials	Date	Time	Comments

Instructions:

. Analyzers to be calibrated weekly.

cc: Perc production Supervisor
Environmental Coordinator
Central Files

5-15-86

FIGURE C

WASTE INCINERATOR ANALYZER CHECK - CO_2

Month _____ Year _____

CO_2 ANALYZER			
Initials	Date	Time	Comments

Instructions:

Analyzers to be calibrated weekly.

cc: Perc Production Supervisor
Environmental Coordinator
Central Files

5-15-86

FIGURE D

Year _____

WASTE INCINERATOR PREVENTIVE MAINTENANCE CHECK

Equipment	Frequency	Preventive Maintenance	Date	Time	Signature	Comments/Corrective Action
1. Combustion Blower	12/Year	Blower-Vibration Check Motor-Vibration Check				
2. Waste Feed Flow Control Loop	6/Year	Calibrate Valve Actuator and Positioner Lubricate Actuator Zero and Range Flow Meter				
3. Atomizing Steam Pressure and Flow Meters	6/Year	Calibrate Pressure Transmitter Zero and Range				
4. Combustion Temperature Transmitter and Recorder	6/Year	Zero and Range Transmitter and Recorder				

cc: Central Files/Mo

5-15-86
Form No.:

FIGURE D

Year _____

WASTE INCINERATOR PREVENTIVE MAINTENANCE CHECK

	Equipment	Frequency	Preventive Maintenance	Date	Time	Signature	Comments/Corrective Action
5.	Combustion Air Inlet Filter	4/Year	Replace				
6.	Combustion Air Flow Meter	4/Year	Zero and Range Flow Meter				
7.	Waste Feed Flow Control Valve	2/Year	Overhaul Valve				
8.	Waste Feed Flow Meter	2/Year	Inspect Orifice Plate				
9.	Caustic Circulation Flow Meter	2/Year	Zero and Range Flow Meter				
10.	Condensate to D-103H Flow Meter	2/Year	Zero and Range Flow Meter				
11.	Caustic to D-103H Flow Meter	2/Year	Zero and Range Flow Meter				
12.	Hex Circulation Piping	1/Year	Electrical Check, Impedance Heating				
13.	Natural Gas Regulators and Flow Meter	1/Year	Adjust Line Regulator Adjust Pilot Regulator Adjust Burner Regulator Rework Pressure Safety Valve Zero and Range Flow Meter				

cc: Central Files/Mo

5-15-86
Form No.:

FIGURE D

Year _____

WASTE INCINERATOR PREVENTIVE MAINTENANCE CHECK

	Equipment	Frequency	Preventive Maintenance	Date	Time	Signature	Comments/Corrective Action
14.	Waste Incinerator	1/Year	Visual Inspection of Plenum and Chamber				
15.	Vent Scrubber	1/Year	Visual Inspection - Internals				
			Zero and Range Level Transmitter				
			Zero and Range Makewater Flow Meter				
16.	Transition Piping	1/Year	Thickness Check				
17.	Acid Circulation Cooler	1/Year	Visual Inspection				
18.	Acid Cooler	1/Year	Visual Inspection				
19.	Caustic Surge Drum	1/Year	Visual Inspection				

cc: Central Files/Mo

5-15-86
Form No.:

WEEKLY FIRE EXTINGUISHER CHECK SHEET

NAME OF INSPECTOR _____ PLANT SECTION ANHYDROUS HCL

DATE _____ SUPERVISORS SIGNATURE _____

TIME _____ a.m.
_____ p.m.

EXTINGUISHER NO.	IN ASSIGNED LOCATION		ACCESSABLE & UNOBSTRUCTED		SEALS UNBROKEN		NOZZLES UNOBSTRUCTED		GAGE INDICATES PROPER PRESSURE	
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
XT 188										
XT 192										

If any area above is marked "No" or any physical conditions are noted (e.g. dent, broken handles) this section must be filled in.

EXTINGUISHER	DESCRIPTION	CORRECTIVE ACTION TAKEN

Form #1394-38
Rev. 6-19-80

NAME OF INSPECTOR _____ PLANT SECTION SERVICE DEPARTMENT (TANK AREA)

DATE _____ SUPERVISORS SIGNATURE _____

TIME _____ a.m.
_____ p.m.

EXT. NO	TYPE	IN ASSIGNED LOCATION YES	IN ASSIGNED LOCATION NO	ACCESSABLE & UNOBSTRUCTED YES	ACCESSABLE & UNOBSTRUCTED NO	SEALS UNBROKEN YES	SEALS UNBROKEN NO	NOZZLES UNOBSTRUCTED YES	NOZZLES UNOBSTRUCTED NO	GAGE INDICATES PROPER PRESSURE YES	GAGE INDICATES PROPER PRESSURE NO	LOCATION
XT 0119	10#DC											Penta Whse - North Door
XT 0122	20#DC											Penta Whse - South Door
XT 0166	20#DC											Tk 13
XT 0167	20#DC											Tk 13
XT 0186	20#DC											CS_2 Unloading Rack
XT 0188	20#DC											East of Tk 35
XT 0189	15#CO_2											Solvent Whse - South Door
XT 0190	20#DC											Solvent Whse - East Door
XT 0191	20#DC											I-4 Load Rack
XT 0257	20#DC											Methanol Pumps
XT 0364	20#DC											Solvent Truck Load Rack - N
XT 0365	20#DC											Solvent Truck Load Rack - S

If any area above is marked "No" or any physical conditions are noted (e.g. dent, broken handles) this section must be filled in.

EXTINGUISHER	DESCRIPTION	CORRECTIVE ACTION TAKEN

Form #1394-42
Rev. 10/83

WEEKLY FIRE EXTINGUISHER CHECK SHEET

NAME OF INSPECTOR _____ PLANT SECTION PERC

DATE _____ SUPERVISORS SIGNATURE _____

TIME _____ a.m.
_____ p.m.

EXTINGUISHER NO.	IN ASSIGNED LOCATION		ACCESSABLE & UNOBSTRUCTED		SEALS UNBROKEN		NOZZLES UNOBSTRUCTED		GAGE INDICATES PROPER PRESSURE	
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
XT0177										
XT0178										
XT0179										
XT0180										
XT0181										
XT0182										
XT0183										
XT0184										
XT0185										

If any area above is marked "No" or any physical conditions are noted (e.g. dent, broken handles) this section must be filled in.

EXTINGUISHER	DESCRIPTION	CORRECTIVE ACTION TAKEN

Form #1394-24
Rev. 6-19-80

ATTACHMENT IV

CONTINGENCY PLAN

SECTION G

CONTINGENCY PLAN

G - Contingency Plan and Emergency Procedures

264.50 Applicability

Vulcan operates three TSD facilities; an incinerator for the destruction of K016 waste, a container storage area for the storage of F021/F027 waste, and injection wells for the disposal of D002 wastewater. Since these facilities handle hazardous waste, a contingency plan must be kept on file.

264.51 Purpose and Implementation of Contingency Plan

(a) The purpose of this Contingency Plan is to maintain a working document of procedures which can be implemented at the time of an emergency. The plan is limited to the operation of hazardous waste facilities. Medical, Fire/Explosion and Chemical Release Emergencies can all be addressed by the plan.

(b) The plan is implemented through an internal telephone-intercom system or the Emergency Signal System. Once activated, the signal is broadcasted over an intercom and horn system that can be heard throughout the plant. The alarm system is operated by plant or administrative personnel, all which have been trained. Emergency procedures are initiated according to these guidelines:

1. The Fire/Explosion Emergency Signal is sounded for any fire that cannot be contained by a portable fire extinguisher.

2. The Emergency Medical Signal is sounded if any person at the scene believes that injured personnel require immediate medical care.

3. The Chemical Release Signal is sounded if a release may effect work in any area of the plant, or may be in excess of Superfund reportable limits.

264.52 Content of Contingency Plan

(a) The Vulcan RCRA Contingency Plan is an emergency plan for responding to chemical releases, fire/explosion emergencies, and medical emergencies from hazardous-waste facilities. Vulcan's Emergency Response Plan and Vulcan's RCRA Contingency Plan are initiated by the same mechanism; however, at the point a RCRA facility is deemed to be involved, the plans are separate. Tables G-1, G-2, and G-3 describe the RCRA emergency procedures. Attached as Appendix G-3 is a description on the Emergency Signal System.

1. Medical Emergency

In the event of a RCRA hazardous waste facility medical emergency, the medical signal would be activated, as outlined in Appendix G-3, Emergency Signal System. This signal can be activated by any plant employee through the internal telephone-intercom system. The alarm signals trained plant response personnel to report to designated locations. Table G-1, RCRA Hazardous Waste Facility Medical Emergency is a flow diagram for responding to the emergency. If the decision is made to use outside medical services (i.e. EMS or Ambulance), 911 is immediately notified. 911 will dispatch the appropriate local authority(ies). All dispatched local authorities will be met at the main gate. They will be provided safety equipment and escorted to the scene of the accident. The duties of all medical emergency response personnel are attached in Appendix G-9.

2. Fire/Explosion Emergency

In the event of a RCRA hazardous waste facility fire/explosion emergency, the fire signal will be activated, as outlined in Appendix G-3, Emergency Signal System. This signal can be activated by any plant employee through the internal telephone-intercom system. Trained personnel immediately report to designated locations at the sound of the alarm. Table G-2 outlines the procedures for responding to a hazardous waste fire/explosion emergency. If Vulcan response personnel cannot immediately bring the incident under control, the Sedgwick County Fire Department (SCFD) is notified. 911 is also notified in case other services are needed. The SCFD can respond to the plant site within four minutes. Once the incident is under control, remedial measures will be initiated. Appendix G-10 includes a listing of duties for the Fire and Explosion response personnel.

3. Chemical Release Emergency

In the event of a RCRA hazardous waste facility chemical emergency, the chemical release signal is activated as outlined in Appendix G-3, Emergency Signal System. This signal can be activated by any plant employee through the internal telephone-intercom system. Trained personnel immediately report to designated areas when the signal is activated. Table G-3 outlines the responsibilities of the Vulcan emergency personnel and the response procedures. Designated personnel respond at the scene to contain the release, which is defined as a gas, liquid, or solid released to the environment. In the event of an air-borne release, Vulcan personnel will move downwind to determine if the release is detectable outside the plant boundary. If the release is detectable, 911 is immediately notified. Open communication is maintained with 911 throughout the incident. If it is determined that the area outside the plant is affected, 911

immediately dispatches the necessary response agencies (i.e. SCFD, Police, EMS). Once the situation is controlled, necessary remedial measures are initiated. If the quantity of the release is in excess of the CERCLA Superfund reportable quantities, the release is reported to the U.S. EPA, KDHE, and the Sedgwick County Health Department. The duties of the chemical release response personnel are discussed in Appendix G-11.

(b) Vulcan maintains an Emergency Response Plan for the entire plant, SPCC Plan, and RCRA Contingency Plan. All plans are separate plans; however, the RCRA plan was structured to coordinate with the Plant Emergency Response Plan.

(c) As required by 40 CFR 264.37, the owner or operator must attempt to make arrangements, as appropriate for the type of waste handled at the facility and the potential need for the services of local authorities and contractors. Since the waste handled at Vulcan's facilities is not volatile, ignitable or reactive, the potential for a chemical release, fire or explosion that would impact the environment is very limited.

In cases of a medical emergency involving the RCRA facilities, St. Joseph Hospital, St. Francis Hospital, Emergency Medical Services (EMS) and/or Emergency Medical Services Technician (EMST) may be used. It is important that each group be familiar with the waste handled at each facility. Material Safety Data Sheets for the waste have been supplied to each group. Attached as Appendix G-6 are the data sheets.

If EMS or EMST are required to respond to the plant, they are met at the gate by plant personnel and escorted to the scene.

In case of a fire/explosion or chemical release involving a RCRA facility, Sedgwick County Fire Department, Sedgwick County Sheriff's Office, EMS and/or EMST may be dispatched by 911. Any responding agency will be met at Vulcan's main gate, supplied safety equipment, and escorted to the scene.

All agencies have received a copy of the RCRA Contingency Plan and have been briefed as to the contents of the plan. (See Appendix G-7 for copies of letters from the local authorities to acknowledge receipt of the plan.) Additional information related to local authority involvement is discussed in Section F-3(F) Arrangement With Local Authorities.

(d) As part of the RCRA Contingency Plan, an emergency coordinator must be identified. The Production Services Shift Foreman (PSSF) is the emergency coordinator. Appendix G-1 is a list of the PSSF's. Since the plant operates 24 hours per day, 365 days per year, more than one PSSF is required. Only one PSSF is on duty at a time, so there is no conflict as to who is the on-site coordinator. The alternate emergency coordinator to the PSSF is the PSSF's supervisor.

(e) Various types of equipment are required to respond to emergencies at the hazardous-waste facilities. The following is a list of equipment needed for each facility:

Hex Incinerator Emergency Equipment

1. The external telephone system is located at the command post (guard station). This system can be used to request emergency assistance.

2. Internal phone system and intercom is used to activate the Emergency Signal System and obtain assistance during remedial measures. The system is tested once a week.

3. Safety showers and eye wash units are located throughout the plant. Three safety showers and eye wash units are located around the hex incinerator area. Water pressure is monitored hourly by the Utility and Pollution Control operators and logged on a daily log sheet. The pressure is maintained at approximately 40 psi. Safety shower and eye wash units are inspected weekly. Attached as Appendix G-2 are the inspection sheets.

4. First aid equipment for the Hex incinerator is located in the control room of the Perchloroethylene Plant for the Hex incinerator. Additional first aid equipment is located in the Nurses Station at the Administration Building. The first aid boxes are maintained by the plant nurse on a monthly basis.

5. An inventory of empty 55-gallon drums, which can be used in responding to spill cleanup, is maintained in Vulcan's Bead Warehouse.

6. A forklift is located at Vulcan's Bead Warehouse, which can be used to transport 55 gallon drums for remedial measures.

7. Plant water is available at the hex incinerator for decontamination of equipment during remedial measures. Pressure in the plant water system is monitored hourly and maintained at or above 40 psi.

8. Additional tools and equipment (such as back-hoe, front end loader, or shovel) are located in Vulcan's Maintenance Building. This equipment does not leave the plant site and is available for spill response at any time.

9. Eye glasses, goggles and hard-hat are issued to each individual and maintained by that person.

10. Gloves, face shields and respirators are available in the control rooms. Respirators are worn when working in a confined area containing hex waste. Hex incinerator operators inspect the respirators on a weekly basis.

Attached as Appendix G-5 is the inspection sheet. Appendix G-4 is the plot showing the location of all RCRA emergency equipment.

11. Fire extinguishers are located throughout the hex incinerator area. Inspections are conducted weekly (Refer to Appendix G-8, Fire Extinguisher Check Sheet). Appendix G-4 is a plot showing the location of the extinguishers.

12. A fire water hydrant is located at the incinerator for responding to fires in the area (Refer to Appendix G-4). Water pressure is maintained above 130 psig and water capacity above 250,000 gallons.

13. A foam trailer and associated hoses are located on-site (Refer to Appendix G-4), which are available for responding to any fire in the area of the hazardous waste facilities. Approximately 500 gallons of foam concentrate are maintained in the trailer. The trailer can be transported by on-site trucks.

14. Five hundred feet of 5" fire hose is located on-site (Refer to Appendix G-4), which is available for responding to any fire in the area of the hazardous waste facilities. The hoses are pressure tested annually.

Container Storage and Disposal Well Area

1. The external telephone system is located at the command post (guard station). This system can be used to request emergency assistance.

2. Internal phone system and intercom is used to activate the Emergency Signal System and obtain assistance during remedial measures. The system is tested once a week.

3. Safety showers and eye wash units are located throughout the plant. Two safety shower and eye wash units are located within 30 feet of the container storage area. Water pressure is monitored hourly by the Utility and Pollution control operators and logged on a daily log sheet. The pressure is maintained at approximately 40 psi. Safety shower and eyewash units are inspected weekly. Attached as Appendix G-3 are the inspection sheets. The same safety showers in the container storage area can be utilized in operating disposal wells.

4. First aid equipment for the container storage area and disposal wells is located in the Service Department control room. Additional first aid equipment is located in the Nurses Station at the Administration Building. The first aid boxes are maintained by the plant nurse on a monthly basis.

5. An inventory of empty 55-gallon drums, which can be used in responding to spill cleanup, is maintained in Vulcan's Bead Warehouse.

6. A forklift is located at Vulcan's Bead Warehouse, which can be used to transport 55 gallon drums for remedial measures.

7. Plant water is available at the container storage area and disposal wells for decontamination of equipment during remedial measures. Pressure in the plant water system is monitored hourly and maintained at or above 40 psi.

8. Additional tools and equipment (such as back-hoe, front end loader, or shovel) are located in Vulcan's Maintenance Building. This equipment does not leave the plant site and is available for spill response at any time.

9. Eye glasses, goggles and hard-hat are issued to each individual and maintained by that person.

10. Gloves, face shields and respirators are available in the control rooms. Respirators are not required at the container storage area or the injection wells. Inspections of respirators are conducted on a weekly basis. Attached as Appendix G-5 is the inspection sheet. Appendix G-4 is the plot showing the location of all RCRA emergency equipment.

11. Fire extinguishers are located in the area of the disposal wells and container storage area. (Refer to Appendix G-8, Fire Extinguisher Check Sheet). Appendix G-4 is a plot showing the location of the extinguishers.

12. A fire water hydrant is located at the container storage area for responding to fires in the area (Refer to Appendix G-4). Water pressure is maintained above 130 psig and water capacity above 250,000 gallons.

13. A foam trailer and associated hoses are located on-site (Refer to Appendix G-4), which are available for responding to any fire in the area of the hazardous waste facilities. Approximately 500 gallons of foam concentrate are maintained in the trailer. The trailer can be mobilized by on-site trucks.

14. Five hundred feet of 5" fire hose is located on-site (Refer to Appendix G-4), which is available for responding to any fire in the area of the hazardous waste facilities. The hoses are pressure tested annually.

(f) Evacuation Plan

The evacuation plan is a part of the RCRA Contingency Plan. In responding to a chemical release or fire/explosion incident, the evacuation plan is automatically activated. A designated Vulcan emergency responce team member is responsible for evacuating people in the area of a release. The following is the evacuation plan for each hazardous waste area.

Hex Incinerator Area

Once the emergency signal is sounded, the Vulcan response personnel move to the designated areas. One of the Vulcan response team members (Racon Area Shift Foreman) inspects the effected area to assure all personnel have left the area. Vulcan employees are all trained to move cross-wind from any release and to evacuate the area. The evacuation routes around the Hex Incinerator are identified in Appendix G-4. The incinerator area can be evacuated from the east, north, and west sides. The route of evacuation will depend on the nature of the release and wind conditions. Each route meets with an east-west plant road, along which individuals can escape from the area.

Container Storage and Disposal Well Area

Once the emergency signal is sounded, the Vulcan response personnel move to the designated areas. One of the response team members (Racon Area Shift Foreman) inspects the effected area to assure all personnel have left the area. Vulcan employees are all trained to move cross-wind from any release and to evacuate the area. The evacuation routes around the container storage and disposal well area are identified in Appendix G-4 and Appendix L-9. The container storage area can be evacuated from the east, south, and west sides. The disposal wells can be evacuated from any side. The route of evacuation will depend on the nature of the release and wind conditions. Each route meets with a north-south plant road along which individuals can escape from the area.

264.53 Copies of the Contingency Plan

(a) A copy of this Contingency Plan is maintained at the Wichita Plant.

(b) Copies of the Contingency Plan have been provided to the Sedgwick County Fire Department, Sedgwick County Police Department, Sedgwick County Emergency Medical Service, Sedgwick County Emergency Communications, St. Josephs Medical Center, St. Francis Hospital, and Minor Emergency Center. Appendix G-7 contains copies of letters from these agencies confirming receipt of the plan.

264.54 Amendment of Contingency Plan

(a) If the facility permit is revised the Contingency Plan will be revised. An internal environmental review is conducted on all proposed RCRA facilities. If permit modifications are required the Contingency Plan is revised at this time.

(b) If the plan fails in an emergency, the plan will be revised to prevent future failures.

(c) If the facility changes its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste, or hazardous waste constituent, or changes the response necessary to an emergency, the plan will be revised.

(d) If the list of emergency coordinators change the plan will be updated.

(e) If the list of emergency equipment changes the plan will be updated.

264.55 Emergency Coordinator

An emergency coordinator is on the facility premises at all times. This person has been trained in emergency response procedures, is trained to implement this plan, and has the authority to commit resources needed to carry out the RCRA Contingency Plan.

264.56 Emergency Procedures

(a) As discussed in 264.51 (b) the Emergency Response Plan is initiated at the time the emergency signal is activated. This signal can be activated by any Vulcan employee. The Emergency Team will then respond to the scene to determine if the emergency is related to a RCRA facility. If the emergency is at a RCRA facility, the procedures identified in Tables G-1, G-2 and G-3 will be followed. Local agencies with designated response roles will be notified if their help is needed.

(b) In responding to an emergency, the Emergency Coordinator immediately determines the character, source, amount and the impact of the incident.

(c) In determining the impact of the incident, the Emergency Coordinator assesses the possible direct or indirect hazards to human health or the environment.

(d) If the emergency coordinator determines that the RCRA facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, he will report his findings as follows:

1. Emergency coordinator will immediately notify local authorities and be available to help appropriate officials decide whether local areas should be evacuated.

2. Emergency coordinator will have environmental coordinator immediately contacted to notify the Kansas Department of Health and Environment and the National Response Center if the release could be a threat to public health or the environment. The environmental coordinator will convey:

   (i) Name and telephone number of reporter
   (ii) Name and address of facility
   (iii) Time and type of incident
   (iv) Name and quantity of material involved
   (v) Extent of injuries
   (vi) Possible hazards to human health or the environment, outside the facility.

(e) During an emergency, the emergency coordinator will take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

(f) If the facility stops operation in response to a fire, explosion or release, the emergency coordinator will monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(g) In the event of a spill or leak at the hazardous-waste facilities, remedial action will proceed immediately. All contaminated soil will be collected and stored temporarily in the drum storage area. Ultimate disposal would be in an off-site hazardous-waste landfill or an approved treatment facility.

(h) 1. Clean-up of an accident will be completed prior to handling additional waste at the facility. All waste handled is considered compatible waste and non-reactive. Only hex waste is handled at the hex incinerator. All process wastewater disposed in the injection wells are compatible and non-reactive.

2. Any equipment used during an emergency is immediately cleaned and fitted for its intended use after completion of the emergency response.

(i) In the event of an emergency, Vulcan will notify the Regional Administrator, KDHE, and the local authorities, that clean-up procedures have been completed prior to continuing operation.

(j) In the event of an incident at the hex incinerator that activates Vulcan's emergency response plan; a report will be submitted within 15 days of that incident with the following information:

Vulcan Materials Company
P. O. Box 12283
6200 South Ridge Road
Wichita, KS 67277
316-524-4211

Contact: James M. Boyd, Plant Manger
Date, Time of Incident
Type of Incident
Name and Quantity of Materials Involved
Extent of Injuries
Assessment of Actual or Potential Hazards to Human Health or the Environment
Estimate Quantity and Disposition of Recovered Material

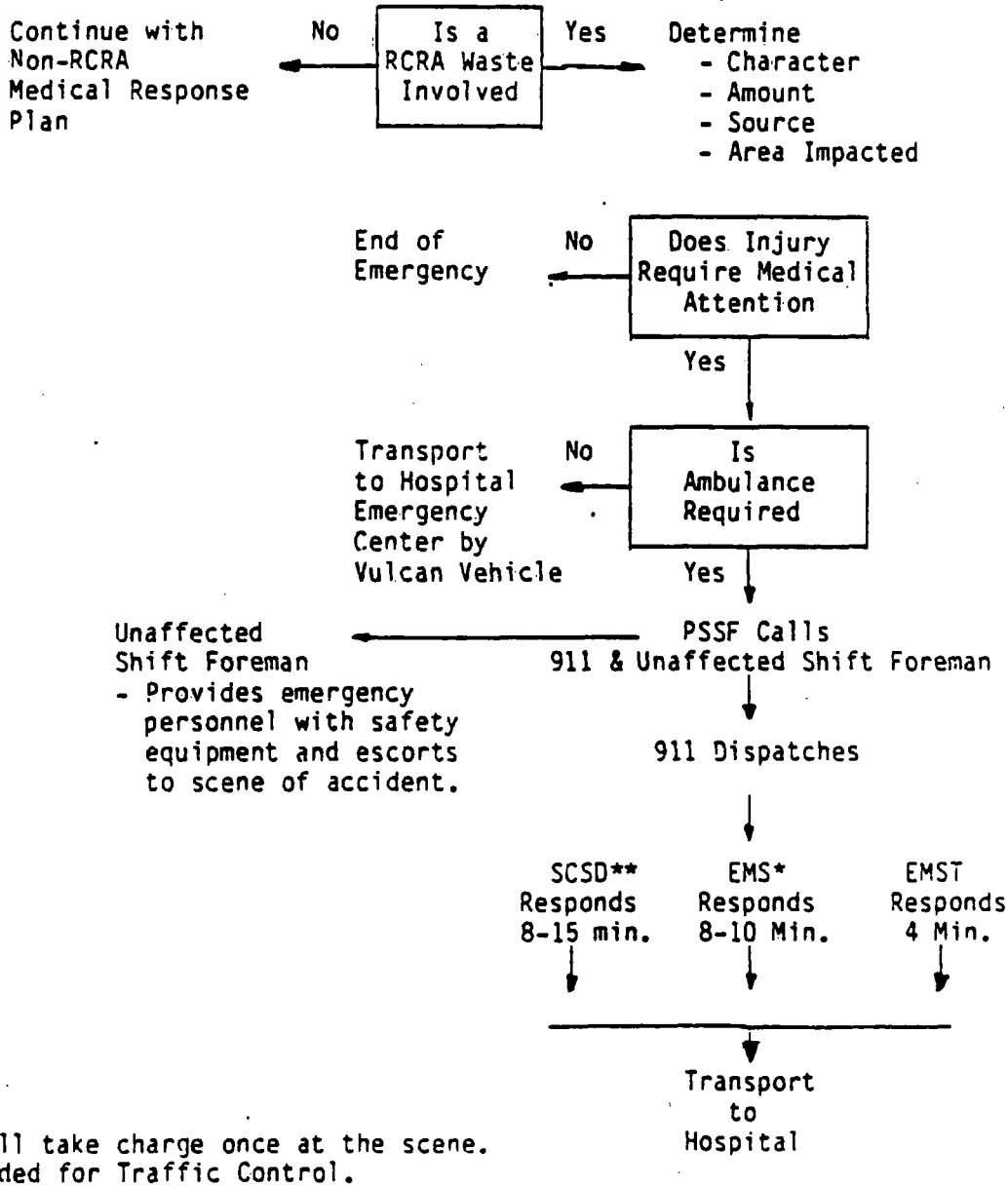
If an incident occurred related to the disposal wells, KDHE would be notified immediately. The UIC Program special notification and reporting requirements related to Vulcan's compliance are outlined in Appendix L-8, Part 3, Section B.

G-1: RCRA HAZARDOUS WASTE FACILITY MEDICAL EMERGENCY

PLANT PROBLEM: MEDICAL EMERGENCY

PERSONNEL IN AFFECTED AREA SOUNDS ALARM FOR EMERGENCY

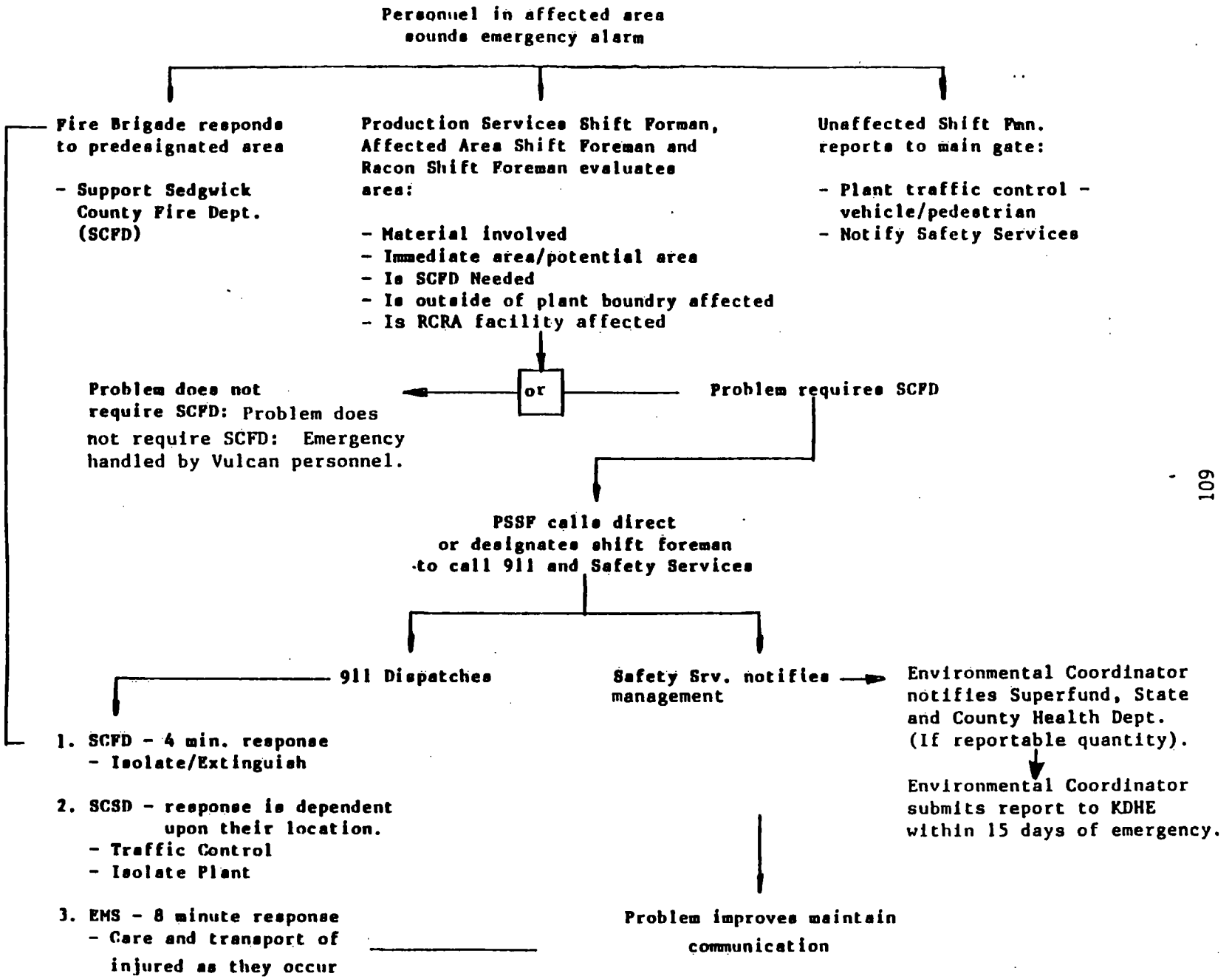
Production Services Shift Foreman
Racon Shift Foreman, and Affected Area
Shift Foreman Respond to Evaluate and
Administer First Aid



*EMS will take charge once at the scene.
**If needed for Traffic Control.

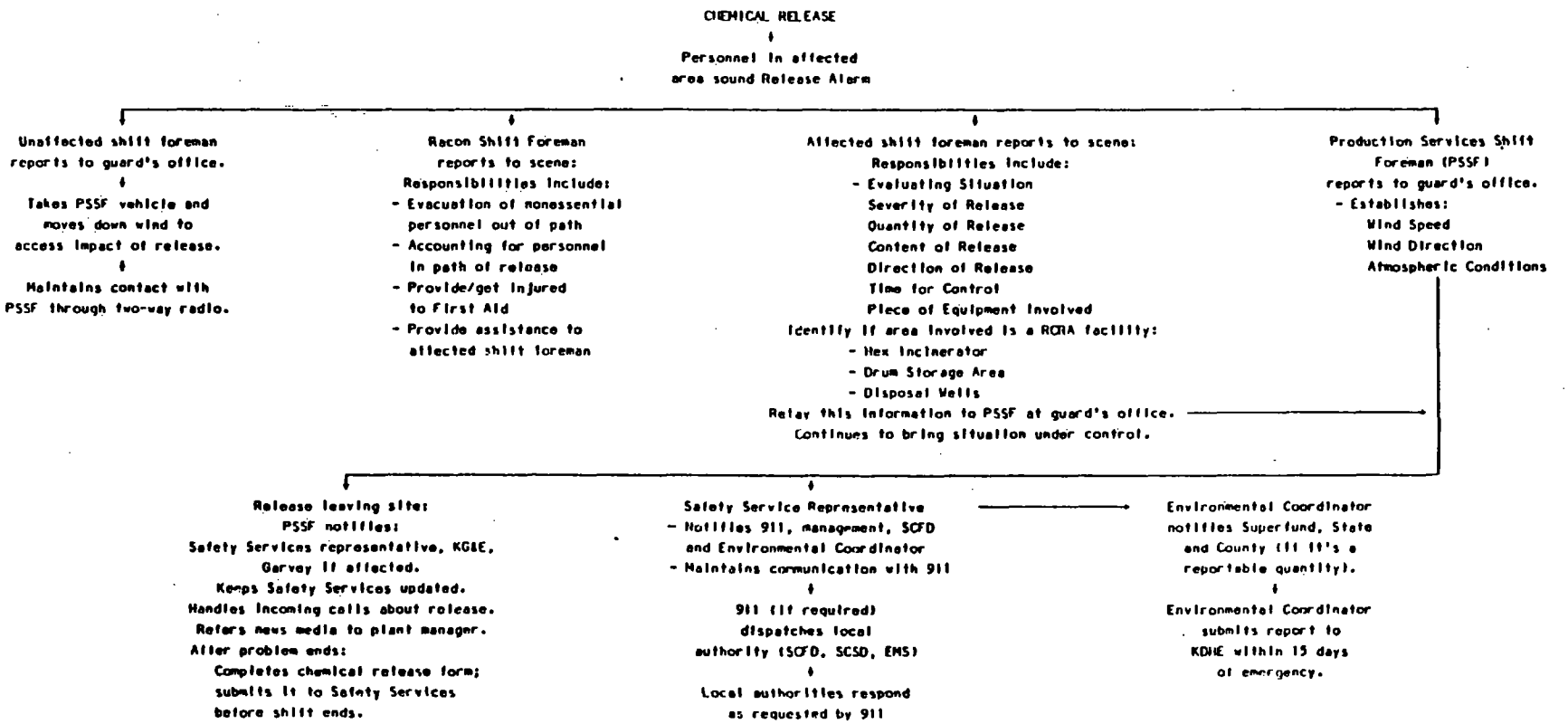
G-2 RCRA HAZARDOUS WASTE FACILITY

PLANT PROBLEM: FIRE/EXPLOSION



(EMS - Emergency Medical Service SCSD - Sedgwick County Sheriff's Department)

G-3: RCRA HAZARDOUS WASTE FACILITY



APPENDIX G-3
WICHITA PLANT SAFETY MANUAL
EMERGENCY SIGNAL SYSTEM

The Emergency Signal System is a means by which plant personnel can quickly obtain individuals trained to handle unusual circumstances.

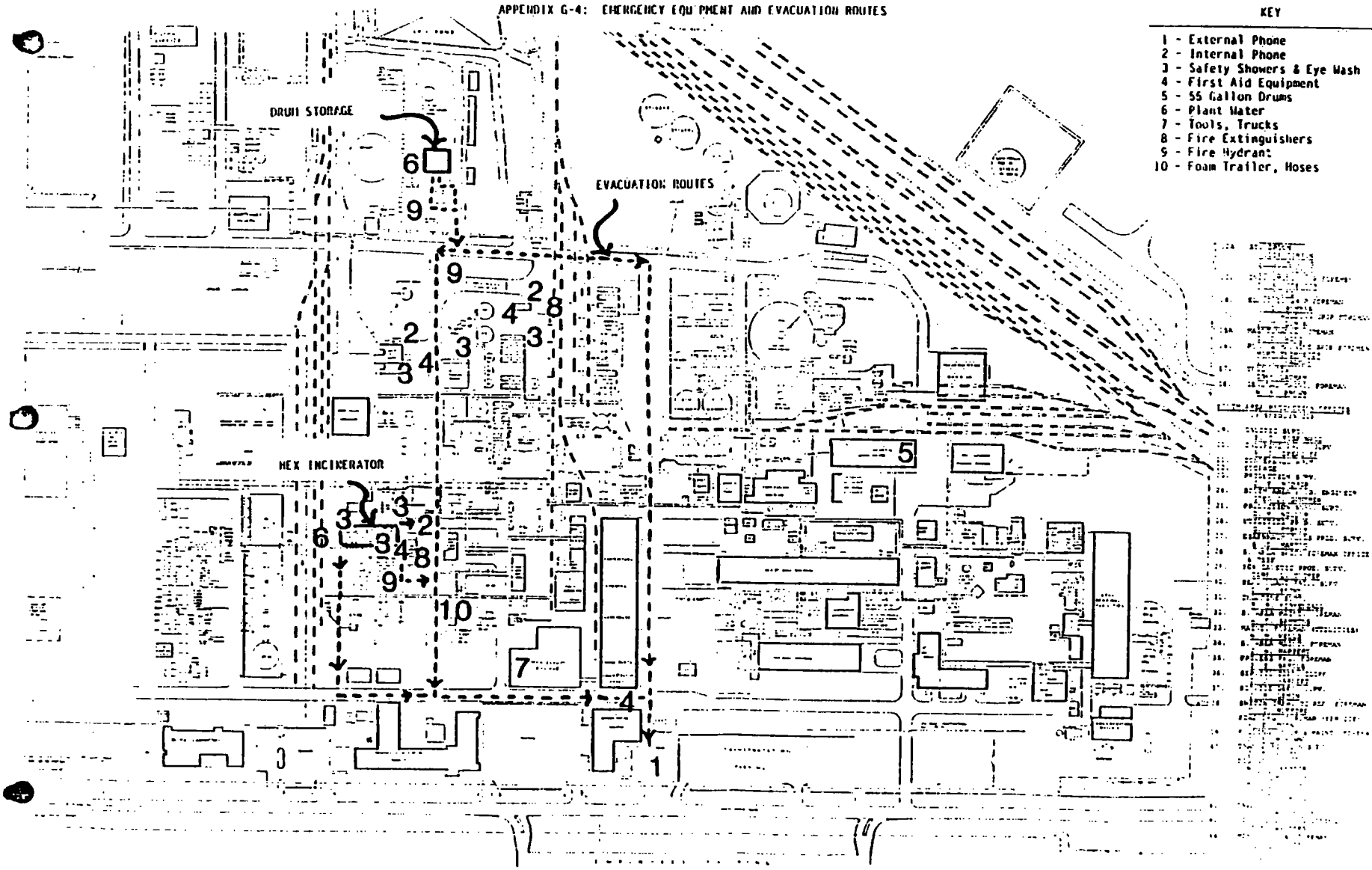
To use the Emergency Signal System dial 81 on any plant telephone and the three digit number that corresponds to the area affected and the type of problem. (Example: Fire at Incinerator - 81-542).

The Emergency Signal System is divided into three broad categories which can be used by anyone at the plant. These signals are the (1) fire signal (2) medical emergency signal and (3) chemical release signal. The fire signal indicates that a fire is out of control and you need more help. The medical mishap/emergency signal indicates that you are in need of a qualified first aider or an event has occurred which does not fall into any other category and you need additional support.

The third category indicates a chemical release has occurred that will probably affect other sections of the plant.

When an alarm sounds, personnel designated in this instruction should report to the affected area. All others should stay in their offices, so that they can be contacted easily. All personnel not on a response team should stay clear of the site of the problem.

APPENDIX G-4: EMERGENCY EQUIPMENT AND EVACUATION ROUTES



APPENDIX G

G-1 Emergency Coordinator

G-2 Safety Shower Weekly Inspection Sheet

G-3 Emergency Signal System

G-4 Emergency Equipment and Evacuation Routes

G-5 Respirator Inspection Sheet

G-6 Hex Products

G-7 Local Authority Letters

G-8 Fire Extinguisher Checklist

G-9 Medical Emergency Duties

G-10 Fire/Explosion Emergency Duties

G-11 Hazardous Waste Release Duties

APPENDIX G-1
EMERGENCY COORDINATOR

Production Services Shift Foreman

	Home Address	Home Telephone	Work Telephone
Al Christensen	624 E. 56th St. S Wichita, KS 67216	529-2480	524-4211 Ext. 350
W. L. McPherson	8101 S. Mead Wichita, KS 67233	524-0448	524-4211 Ext. 350
Harold Thomas	1857 S. St. Clair Wichita, KS 67213	943-1535	524-4211 Ext. 350
Glen Grimm	RR #2 Conway Springs, KS 67031	1-456-2693	524-4211 Ext. 350
Larry Friend	RR #2 Clearwater, KS 67026	1-586-2705	524-4211 Ext. 350
R. O. Reehler*	1208 Joann Dr. Mulvane, KS 67110	777-0297	524-4211 Ext. 430

*Alternate

Appendix G-2 (1 of 3)

SAFETY SHOWER WEEKLY INSPECTION SHEET

To test safety shower and eye wash, open valve to full open position. The safety shower control valve which turns on the water to the shower should be a standard position actuator, which requires no more than one motion to activate. The valve should remain on automatically until turned off by a separate motion.

The eye wash handle should be directly beside the eye wash basin and should open by depressing straight backward. The nozzles should deliver two separate clear streams flowing to the height of six to eight inches above the bowl drain cover.

Please identify safety showers (SS) and eye wash (EW) problems by number according to following key.

KEY

1. No problem
2. No water
3. Water too hot
4. Green light not present or burnt out
5. Valve difficult to open
6. Valve shuts off automatically
7. Handle difficult to reach
8. Pressure too high
9. Pressure too low
10. Foreign material in water (rust, dirt, NaOH, etc.)
11. Access to safety shower blocked
12. Green stripping not present
13. Shower head does not provide even deluge of water
14. No weep Hole
15. No code number
16. Insulation needs repair

EXAMPLE:	Location	Problems
	SS E5XY	4,7
	4 meaning - green light burnt out or not present 7 meaning - handle difficult to reach	

AREA PERC DATE _____ TIME _____

INSPECTED BY _____

CODE#	LOCATION	PROBLEMS / Action Taken	
130	Rundown Tanks		
142	North Side Control Room		
134	North of Incinerator by stairs		
129	Feed Stock Load Rack		
135	Demineralizer Bldg.		
3	Ground Level R-100 Section		
132	1st Level R-100 Section		
131	2nd Level R-100 Section		
136	Ground Level Acid Section by stairs		

ATTACHMENT V

TRAINING PLAN

SECTION H

PERSONNEL TRAINING

The information contained in this section discusses the personnel training program for Vulcan's hazardous waste generator/TSD facilities in accordance with the requirements of 40 CFR 270.14(b)(12) and 264.16.

H-1 Outline of Training Program

Vulcan conducts an on-going RCRA training program which includes an annual review with all employees who handle hazardous waste.

-All new employees who handle hazardous waste are oriented as to the RCRA responsibilities within six months of date of employment or date of transfer. Until the training has been completed, the new or transferred employee is supervised while handling hazardous waste. This training is accomplished through qualification checklist where the operator or mechanic must demonstrate their ability and knowledge to conduct a certain task.

-All employees who handle hazardous waste are trained annually with the same qualification checklist used during the initial training.

In addition to the RCRA training, all employees must complete a safety introductory training program and must participate in a continuing safety training program.

-All new employees receive a 12-hour classroom orientation on General Plant Safety which includes:

1. Hazardous Substances
2. Emergency Signal and Response System to Fires, Chemical Releases, and Medical Emergencies
3. An Introduction to Local/State/Federal Legislation Applicable to Their Job (see Appendix H-1, New Employee Orientation and Check Sheet)

-All new employees receive from their supervisors on-the-job training, which includes the items on the Department Check Sheet (see Appendix H-2, Employee Departmental Safety Check Sheet).

-After employees have completed their probationary period (90 days), they receive an eight-hour Safety Refresher Seminar, which includes:

1. First Aid
2. Hands on use of Fire Extinguisher
3. Emergency Alarm System and Response
4. Permitting Procedures
5. Hazardous Substances Review
6. Hands on use of Air Supplied Respiratory Protection Equipment (see Appendix H-3, Safety Refresher Training).

All employees are trained to handle the products, by-products, and feedstocks that are routinely used. Training includes personal and environmental safety. Personnel who must dispose of waste products, by-products, or feedstocks receive further instruction. This training is documented on check sheets and Individual Training Records.

(Appendix H-4, Utility and Pollution Control Operator Checklist; Appendix H-5, Qualification Checklist for Operating Hex Oxidizer; Appendix H-8, Racon Packaging and Operators Checklist; Appendix H-10, Waste Handling Penta Operator Checklist; Appendix 11, Training Record; Appendix H-9, Racon Maintenance Waste Handler Checklist; and Appendix H-10A, Maintenance Personnel Checklist)

A. Job Titles and Duties

Figure H-1 shows the plant organization. Management responsibilities, which include compliance with RCRA, but do not involve storage or generation of wastes, are shown as administrative.

The Environmental Coordinator provides overall guidance to the Hazardous Waste Program. He is assisted by the Training Coordinator, who assists in preparation of training materials, and maintains RCRA qualification records.

The Utilities and Pollution Control personnel maintain the storage facility, manifest waste removed from the plant, and operate the disposal wells. They also inspect the waste sumps and piping systems that transport waste to injection wells.

The Organic Department operates the hex disposal system and generates penta waste, which is drummed and stored in the storage facility maintained by the Utilities Department.

Racon, which is located adjacent to Vulcan, is operated by Vulcan personnel. Because Racon generates hazardous waste streams, certain Vulcan personnel are trained for the handling of these wastes.

Maintenance personnel work in the areas of Utilities and Pollution Control and the Organic Department. They are maintaining equipment associated with hazardous waste handling and may be involved in spill cleanup.

B. Training Content, Schedules, and Technique

The program at Vulcan for training employees in the safe handling (both personal and environmental) of hazardous materials is a continuous [illegible] as described in Section H-1. RCRA training requirements were incorporated into this already existing program using check sheets to ensure coverage of minimum requirements and as a form of documentation.

Personnel transferred or hired into a position, which requires documented hazardous waste training, receive on-the-job training on items covered on their waste handler checklists. The tasks must be mastered before they handle waste unsupervised. For the hex incinerator the operator must demonstrate the ability to start-up and shutdown the incinerator, monitor operating parameters and log the monitoring data. The incinerator start-up shutdown procedures are included as Appendix H-16. For the drum storage area and disposal wells the operator must demonstrate the ability to monitor the operation and log the data. The checklists are reviewed and updated as required, and annual requalification is conducted in April/May of each year.

Product release prevention is a part of every operator's routine job. Paragraph 2C of Appendix H-1 (New Employee Orientation), and Paragraph D of Appendix H-2 (Safety Refresher Training, and the Waste Operations Checklist) discuss the emergency release signal and response.

Decontamination procedures for exposure to hazardous substances is covered in the New Employee and Refresher Taining (Appendix H-1, H-2, and H-3).

Special instructions and log sheets or books cover inspection, maintenance, and documentation procedures (Appendix H-12, H-13, and H-14).

C. Training Director

The waste generator and waste storage training requirements were meshed with an existing training program, which already contained many of the requirements.

The training program receives administrative guidance and record-keeping from the Training Coordinator and technical guidance from the Environmental Coordinator. Actual RCRA training is conducted by supervisory personnel listed in H-1A.

The Training Coordinator was employed by Vulcan in January 1979 to help organize and coordinate a formal training program. This program incorporates both company and government regulations into the training system. A records system was initiated and is maintained to record OSHA Compliance. This same system is also used for RCRA documentation.

D. Relevance of Training to Job Position

The training program presented in Appendix H-1 and H-3 applies to the plant as a whole, but Appendix H-2 is specific to a work area within the plant. The operator checklists in Appendix H-4, H-5, H-8, H-9, H-10, and H-10A are also specific to a work area or job. Line supervision, as shown in Section H-1A, has the technical knowledge of plant operation and provides training to personnel within their job area.

E. Training for Emergency Release

This training program is also designed to prepare people to respond to emergency situations. Both the Preventive Hazards and Contingency Plan sections have addressed the emergency response procedures and inspections to prevent hazards. All operators and supervisors are trained in their roles in emergency response.

RCRA training requires operators in the Perchloroethylene and Utilities and Pollution Control to be knowledgeable on responses to emergency spills, inspections to prevent hazards, and upset conditions.

Orientation training exposes all personnel to the potential hazards involved in the chemicals handled, and the safety equipment available in case of an emergency.

Emergency response training is conducted monthly for emergency response supervisors and bimonthly for nonsupervisors in the fire brigade. Six of these training sessions are conducted with outside agencies.

Emergency situation training is conducted with outside agencies and Vulcan personnel semiannually. All of these training programs play an important part in Vulcan's emergency response for the Wichita Plant. If an emergency occurs in the area of the hazardous waste facilities, the procedures demonstrated during training are implemented.

H-2 Implementation of Training Program

Initial training required by RCRA was incorporated into the existing training program as discussed in Paragraph H-1. The initial training was provided to designated personnel using checklists (Appendix H-4 and H-5) to ensure standardized training and coverage. This training was completed in May of Program Start-up (1980). The program was expanded during the annual review in 1981 and 1983 to include two generating areas (Appendix H-8, H-9, and H-10). In 1984 the program was expanded to include the maintenance personnel since they are involved in the cleanup of spills. (Appendix H-10A).

Jobs requiring RCRA training are identified by the training coordinator. When employees are advanced or transferred into one of these jobs, the training coordinator notifies the supervisor that RCRA training is required and qualification (appropriate checklist) must be completed in six months.

Annual retraining and re-certification of initial training (updated as required) is accomplished for all designated personnel in April/May of each year. Both the checklists and training records are maintained for current personnel and are filed for former employees for a minimum of three years.

All job title and job duty descriptions applicable to RCRA are kept on file with the training coordinator. Any restructuring of positions or job descriptions is channeled through the training coordinator.

If there are any program modifications, permit modifications, or process changes which would impact the handling of hazardous waste, the training program will be updated.

ATTACHMENT VI

CLOSURE PLAN

SECTION I

CLOSURE PLAN, POST-CLOSURE PLAN, AND
FINANCIAL REQUIREMENTS

This section is submitted in accordance with the requirements of 40 CFR 270.15(b)(13), 264.112 through 115, 264.178, 264.197, and 264.258. This section of the RCRA Part B permit will identify steps that will be necessary to close areas of the plant that pertain to RCRA Part B permitting.

Vulcan will maintain, on site, the approved Closure Plan and all revisions to the plan until the certification of closure completeness has been submitted to EPA, Region VII. Vulcan will notify the Regional Administrator at least 180 days prior to the date we expect to begin final closure. The date of closure for pertinent facilities has yet to be determined. Upon completion of closure, Vulcan will submit to the Regional Administrator a certification by the plant manager and a local independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved Closure Plan.

I-1 - 40 CFR 270.15(b)(13)

A. (264.111) - Closure Performance Standard

The closure plan was designed to minimize the need for further maintenance and controls, minimize or eliminate the possible threats to human health and the environment, and avoid post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere. If, upon closure, there is evidence of spills or leaks, samples will be taken and analyzed to determine the extent of contamination in the soil and if necessary, in the groundwater. Any hazardous soil will be excavated, removed, and disposed of at a proper disposal facility. Remedial action will be taken for any contaminated groundwater. The following sections discuss in detail efforts that will be made by Vulcan to satisfy the closure performance standard.

B. Partial Closure

Vulcan operates five hazardous waste disposal wells, a hazardous waste incinerator and a hazardous waste container storage area. Potentially any one of these facilities could be closed while the others remained in service. If one of these facilities would be closed it would be closed in accordance with the closure plan.

C. Maximum Inventory

Each hazardous waste facility has waste storage or surge capabilities. The waste that has accumulated at the time of closure must be disposed off-site. The following is a list of the maximum inventory for each facility.

1. Container Storage Area has a maximum inventory of 250 drums - 55 gallon drums.

2. Hex incinerator has a maximum storage capacity or potential inventory of 9 tons or 1,345 gallons.

3. The disposal wells have maximum potential inventory of 1.67 million gallons.

D. Inventory Removal, Disposal and Equipment Decontamination

1. Container Storage Area

In closing the Container Storage Area the following procedures will be implemented.

a. Accumulated waste will be shipped off-site for disposal at a permitted facility.

b. The containment area will be steam cleaned and washed thoroughly with water. Samples of washwater will be taken to verify the pad has been cleaned properly.

c. On-site disposal wells will be used to dispose of steam condensate and washwaters. If on-site wells are not available, condensate and washwater will be disposed off-site at a permitted facility.

2. Incinerator

In closing the hex incinerator the following procedures will be implemented.

a. Accumulated hex waste will be removed by on-site incineration or off-site incineration.

b. Solvent will be flushed through hex feed system. Spent solvent will be incinerated on-site or drummed for off-site incineration.

c. Scrubber tower will be drained to process wastewater system for disposal in on-site injection wells or drummed for off-site disposal.

d. All hex feed system, combustion chamber, scrubber tower equipment, and containment area will be steam cleaned.

e. Steam condensate will drain to process wastewater system for disposal in on-site injection wells or drummed for off-site disposal. Wastewater will be analyzed to assure the decontamination was effective.

f. The equipment will be disassembled and salvaged.

3. Disposal Wells

In closing the disposal wells the following procedure will be used.

a. Accumulated waste will be disposed by on-site disposal wells or transported off-site to a permitted disposal facility.

b. Injection tubing will be pulled and decontaminated.

c. Washwater will be disposed by on-site disposal wells or transported for off-site disposal.

d. The well will be filled with sand or gravel to the top of the Arbuckle.

e. A permanent plug will be set on the bridging material.

f. The long string will be filled from bottom to the top with Class A, AAA, or H grade cement. The cement will be placed using tremie pipe and displacement method.

E. Schedule for Final Closure

1. DATE OF FINAL WASTE GENERATION - Not determined.

2. DATE OF ALL ON-SITE DISPOSAL COMPLETED - 90 days after cessation of operations.

3. DATE OF OFF-SITE DISPOSAL - 90 days after cessation of operations.

4. DATE OF CLOSURE COMPLETION - 180 days after cessation of operations. A detailed closure schedule is attached as Table I-4.

Vulcan Materials Company, Chemicals Division, Wichita Plant has been in operation since 1953. This facility has no plans for closure. At the time a determination is made for date of closure the U. S. EPA Region VII and KDHE would be notified.

F. Extensions for Closure Time

Vulcan is not requesting an extension for closure time at this time. If something unforseen occurs that requires an extension, a request will be made.

G. Amendments of Closure Plan (264.112)

The closure plan will be amended whenever:

1. Changes in operating plans or facility design affect the closure plan.

2. There is a change in the expected year of closure.

3. There is a permit modification.

4. There is a change in the inventory of waste storage.

5. There is a change in the closure schedule.

A copy of the plan is maintained on-site and all revisions to the plan are kept on-site. This plan and revision will be maintained on-site until the facilities have been closed and certified.

I-2 - Post Closure Plans - 40 CFR 270.15(b)(13)

Post-closure care will not be needed for this facility because Vulcan does not operate a land disposal facility for hazardous waste.

I-3 - Notice in Deed and Notice to Local Land Authority - 40 CFR 270.15(b)(14)

Under the requirements of 40 CFR 264.120, Vulcan is required to record a notation on the deed to the facility property that will in perpetuity notify any potential purchaser of that property that the land has been used to manage hazardous waste. Vulcan has filed the notification with the local land authority. (Refer Appendix I-2.)

I-4 - Closure Cost Estimate - 40 CFR 270.15(b)(15) and 264.142

The closure cost information presented is submitted in accordance with the requirements of 40 CFR 270.15(b)(15), 264.142, and 264.143.

An estimated $348,689 (Feb. 1985 cost estimate) will be needed to close the Vulcan hazardous waste facilities. The cost estimate, presented by activity in Tables 1 through 4, includes closure costs for the hex incinerator, the drum storage area, and disposal wells.

This closure cost estimate will be kept on file at the Vulcan Wichita plant site. It will be revised whenever a change in the closure plan affects the cost of closure. The plan will be adjusted annually (from the date of its original development by the environmental coordinator) to reflect changes in closure cost brought about by economic trends. The Department of Commerce Annual Implicit Price Deflator for Gross National Product will be used to make this adjustment, as is required by 264.142(b).

I-5 - Financial Assurance Mechanism for Closure - 40 CFR 270.15(b)(18), 264.143, and 264.150

Vulcan Materials Company, of which Vulcan Chemicals is a division, has demonstrated financial assurance through the financial test specified in subpart H of 40 CFR 264 and 265. The current closure cost estimates are outlined in Tables 1 through 3. A letter to the Kansas Department of Health and Environment is submitted annually outlining the financial test and corporate guarantee specified in subpart H of 40 CFR parts 264 and 265 (refer to Appendix I-1).

I-6 - Post Closure Cost Estimate - 40 CFR Sections 270.15(b)(16) and 264.144

Because Vulcan does not operate a RCRA land disposal facility which requires post-closure activities, there will be no post-closure costs. The disposal wells are exempt from Subpart F requirements but are required to meet UIC requirements.

I-7 - Financial Assurance Mechanism for Post-Closure - 40 CFR Sections 270.15(b)(16) and 264.145

There will be no post-closure activities or costs associated with the hex incinerator, container storage area, or disposal wells. Yet, provisions have been made in the submitted financial test which demonstrates the ability by Vulcan to cover closure or post closure expenses.

I-8 - Liability Insurance - 40 CFR Sections 270.15(b)(17) and 264.147

A. Sudden Insurance - 40 CFR Sections 265.143(a), 264.151(i), and 264.151(j)

Vulcan, as owner and operator, has met the requirements of this section by passing a financial test for liability coverage as specified in 264.147(f). A copy of the financial test application and a letter from Vulcan Chief Financial Officer can be found at the end of this section (I).

B. Nonsudden Insurance - 40 CFR 264.147(b), 264.151(i), and 264.151(j)

Vulcan is a storage and treatment facility, therefore, no liability insurance is required for a nonsudden accidental occurrance.

C. Financial Test - 40 CFR 264.147(f) and 264.151(j)

Vulcan has satisfied the requirements of the financial test for liability coverage , 264.147(f). A copy of the letter dated February 14, 1986 from Vulcan's Chief Financial Officer to the Kansas Department of Health and Environment may be referenced to demonstrate that VMC passes the financial test as specified in 264.147(f).

D. Variance Procedures - 40 CFR Section 264.147(c)

Vulcan will not request the Regional Administrator for a reduction of liability amounts.

E. Adjustment Procedures - 40 CFR Section 264.146(d)

If the Regional Administrator increases the amount of liability coverage or elects to adjust the level of financial responsibility required by the facility, Vulcan will immediately seek an adjustment to the insurance policy discussed above.

I-9 - State Assumption of Responsibility - 40 CFR 264.150

Vulcan will not request state assumption of the legal or financial responsibilities.

TABLE I-1
CLOSURE ACTIVITIES

TABLE NO.: I-1 Decontamination of Drum Storage Area YEAR: 1981

PREPARED BY: G. T. Mason DATE PREPARED: 5-19-86

DESCRIPTION	QUANTITY	MATERIALS		LABOR				SUB-CONTRACT		TOTAL
		UNIT PRICE	AMOUNT	UNIT M.H.	TOTAL M.H.	RATE	AMOUNT	UNIT PRICE	AMOUNT	
1. Removal of any accumulated waste:										
Estimated average of 100 drums remaining at time of closure.										
A. Drum Transportation/Disposal	250 Drums	$600	$150,000							
TOTALS			$150,000							$150,000
2. Decontamination - Accomplished by removal of any accumulated soil/gravle, etc., within the confines of the storage area. The concrete floor will be steam cleaned and washed thoroughly with water which will be disposed of in the process wastewater system.										
A. Steam for cleaning	24 Mlb	$ 4.40	$ 106							
B. Disposal Cost of Soil/Gravel and Wastewater	10 Barrells							$ 80	$ 800	
C. Labor (3 men X 24 hrs)					72	$18.82	$1355			
TOTALS			$ 106				$1355		$ 800	2,261
3. Professional Engineer Certification									$2000	2,000
4. Contingencies (15% of Total)										27,222
TOTAL										$181,483

TABLE I-2

CLOSURE ACTIVITIES

TABLE NO.: I-2 Decontamination and Removal of Hex System YEAR: 1985

PREPARED BY: G. I. Mason DATE PREPARED: 5-19-86

DESCRIPTION	QUANTITY	MATERIALS		LABOR				SUB-CONTRACT		TOTAL
		UNIT PRICE	AMOUNT	UNIT M.H.	TOTAL M.H.	RATE	AMOUNT	UNIT PRICE	AMOUNT	
1. Removal of Accumulated Hex Waste										
A. Transportation/Disposal	18,000 lbs							$.75/lb	$13,500	
TOTALS									$13,500	$13,500
2. Decontamination - Accomplished by circulating per-										
chloroethylene through the system and treated at a										
permitted facility. Acid remaining in scrubber										
tower will be disposed at a permitted facility.										
Afterwards, system would be steam cleaned.										
A. Perchloroethylene	1,000 gal	$ 3.00	$3,000							
B. Electrical Cost (7 hours)	1,600 KWH	.034	54							
C. Fuel Cost, Natural Gas	8.00 MSCF	3.60	29							
D. Atomizing Steam	7.5 Mlb	4.40	33							
E. Barrels	3 ea.	21.00	63							
F. Steam for Cleaning (Volume = 2,000 gallons)	24 Mlb	4.40	106							
G. Labor (3 men X 24 hours)					72	$18.82	$1,355			
TOTALS			$3,285				$1,355			4,640
3. 55 gallon drums and bulk waste must be hauled to										
permitted facility.										
A. Disposal Cost (condensate and wastewater)	1 Tank Truck							16,000	$ 5,000	
B. Incineration Cost (Spent Solvent)	13,500 lbs							0.75	10,125	
C. Transportation									5,000	
TOTALS									$21,125	21,125

PAGE 1 OF 2

TABLE I-2 (con't)

CLOSURE ACTIVITIES

NO.: I-2 Contamination and Removal of Hex System (Con't) YEAR: 1985

RED BY: G. L. Mason DATE PREPARED: 5-19-86

DESCRIPTION	QUANTITY	MATERIALS		LABOR				SUB-CONTRACT		TOTAL
		UNIT PRICE	AMOUNT	UNIT M.H.	TOTAL M.H.	RATE	AMOUNT	UNIT PRICE	AMOUNT	
Remove refractory from hex oxidizer and plenum and										
deliver to a hazardous landfill.										
A. Remove refractory (2 men X 8 hours)					16	$18.82	$301			
B. Transportation									$ 100	
C. Disposal	2 tons							$103.70	261	
TOTALS							$301		$ 361	$ 662
Professional Engineering Certification								$2,000	$2,000	2,000
Contingencies (15% of total)										7,399
TOTAL										$49,326

TABLE I-3
CLOSURE ACTIVITIES

E NO.: I-3 Inj. Disposal Wells #5, #6, #7, #8, and #9 Closure YEAR: 1985

PARED BY: G. T. Nasson DATE PREPARED: 5-15-86

DESCRIPTION	QUANTITY	MATERIALS		LABOR				SUB-CONTRACT		TOTAL
		UNIT PRICE	AMOUNT	UNIT M.H.	TOTAL M.H.	RATE	AMOUNT	UNIT PRICE	AMOUNT	
Tubing string must be decontaminated and pulled.										
A. Flush tubing string (3 men X 24 hrs)					72	$25	$ 1,800			
B. Pull tubing string.										
Labor (6 men X 16 hrs X 5 wells)					480	20	9,600			
Equipment								$85/hr	$ 6,800	
TOTALS							$11,400		$ 6,800	$ 18,200
Pressure Cement Well	20,000 LF							4/LF	$80,000	80,000
Professional Certification									$ 2,000	2,000
Contingencies (15% of total)										17,680
TAL										$117,880

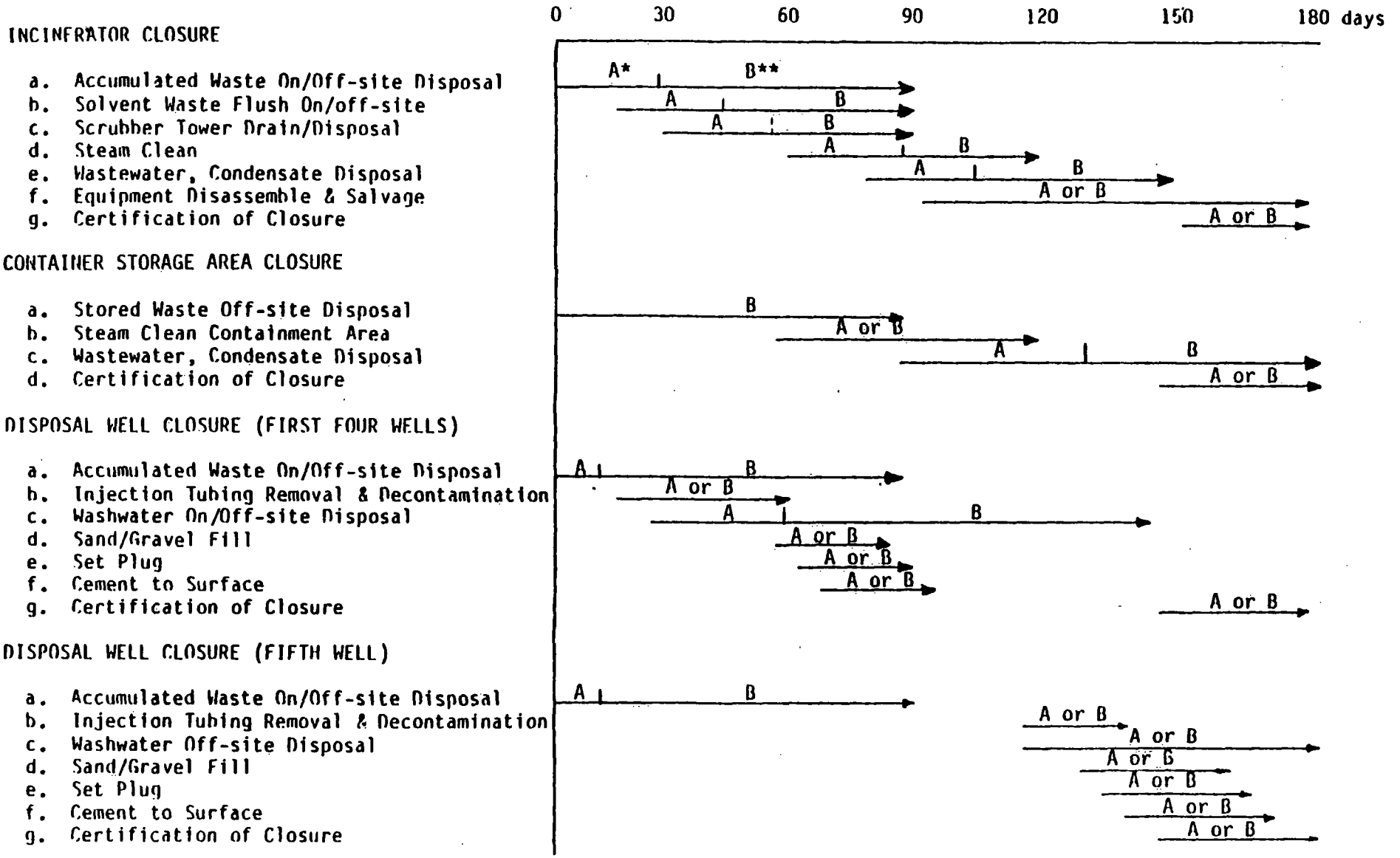
TABLE I-3 (con't)
CLOSURE ACTIVITIES

TABLE NO.: CLOSURE COST SUMMARY YEAR: 1985

PREPARED BY: G. T. Mason DATE PREPARED: 5-17-85

DESCRIPTION	QUANTITY	MATERIALS		LABOR				SUB-CONTRACT		TOTAL
		UNIT PRICE	AMOUNT	UNIT M.H.	TOTAL M.H.	RATE	AMOUNT	UNIT PRICE	AMOUNT	
I-1: Drum Storage Area										$181,4[illegible]
I-2: Wax Incinerator										44,3[illegible]
I-3: Disposal Wells										117,680
TOTAL										$348,689

TABLE I-4
CLOSURE SCHEDULE



* A - Time frame required for on-site disposal.
** B - Time frame required for off-site disposal.

ATTACHMENT VII

CURRENT RCRA REGULATIONS

Will be mailed to anyone requesting a copy.